

STIC Search Report

EIC 1700

STIC Database Tracking Number: 190403

TO: Greg Delcotto
Location: REM 9A39
Art Unit : 1751
May 24, 2006

Case Serial Number: 10/531906

From: Usha Shrestha
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Search Notes



STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher or contact:*

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- I am an examiner in Workgroup: Example: 1713
➤ Relevant prior art found, search results used as follows:
- 102 rejection
 - 103 rejection
 - Cited as being of interest.
 - Helped examiner better understand the invention.
 - Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- Foreign Patent(s)
- Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art not found:

- Results verified the lack of relevant prior art (helped determine patentability)
- Results were not useful in determining patentability or understanding the invention

Comments:



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CONFIRMATION NO. 3917

Bib Data Sheet

SERIAL NUMBER 10/531,906	FILING OR 371(c) DATE 04/18/2005 RULE	CLASS 502	GROUP ART UNIT 1754	ATTORNEY DOCKET NO. HS/15-22771/A/PCT
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** CONTINUING DATA ***** AD

This application is a 371 of PCT/EP03/11636 10/21/2003

** FOREIGN APPLICATIONS ***** AD

EUROPEAN PATENT OFFICE (EPO) 02405929.7 10/30/2002

Foreign Priority claimed	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	STATE OR COUNTRY SWITZERLAND	SHEETS DRAWING	TOTAL CLAIMS 34	INDEPENDENT CLAIMS 1
35 USC 119 (a-d) conditions met	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after allowance				
Verified and Acknowledged	Examiner's Signature AD	Initials			

ADDRESS

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TITLE

Use of metal complex compounds as oxidation catalysts

FILING FEE RECEIVED 3010	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit
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SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: BENSON GREG DELCOTTO Examiner #: 72268 Date: 5/16/06
 Art Unit: 1151 Phone Number 305-717-1312 Serial Number: 10/531906
 Mail Box and Bldg/Room Location: 9A39 Results Format Preferred (circle): PAPER DISK E-MAIL
RAMSEN

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: USE OF METAL COMPLEX COMPOUNDS AS OXIDATION CATALYSTS

Inventors (please provide full names): SEE ATTACHED B1B SHEET 5

Earliest Priority Filing Date: 10/30/02

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

SEE ATTACHED CLAIMS

SCIENTIFIC REFERENCE BR
Sci & Tech Inf. Ctr.

MAY 18 REC'D

Pat. & T.M. Office

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher:	<u>Lishe</u>	NA Sequence (#)	STN <u>6431193</u>
Searcher Phone #:		AA Sequence (#)	Dialog
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Date Searcher Picked Up:	<u>5/24/06</u>	Bibliographic	Dr.Link
Date Completed:	<u>5/24/06</u>	Litigation	Lexis/Nexis
Searcher Prep & Review Time:	<u>40</u>	Fulltext	Sequence Systems
Clerical Prep Time:	<u>30</u>	Patent Family	WWW/Internet
Online Time:	<u>60</u>	Other	Other (specify)

GROUP I, 1-24
W/TRANSVERSE

1. (currently amended): Use, as a catalyst for A method of catalyzing an oxidation-reactions reaction, which comprises contacting an oxidizable substrate with an oxidizing agent in the presence of a catalytically effective amount of at least one metal complex compound of formula (1)



wherein

M is manganese, titanium, iron, cobalt, nickel or copper,

X is a coordinating or bridging radical,

n and m are each independently of the other an integer having a value of from 1 to 8,

p is an integer having a value of from 0 to 32,

z is the charge of the metal complex,

Y is a counter-ion,

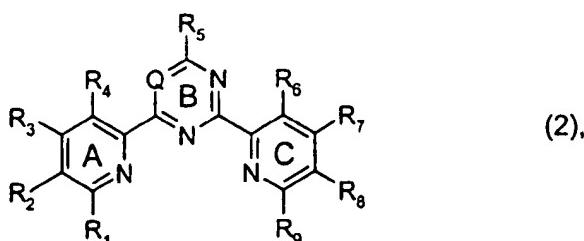
q = z/(charge of Y), and

L is a ligand of formula (2)

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4 - GROUPS

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wherein

Q is N or CR₁₀,

R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉ and R₁₀ are each independently of the others hydrogen;

unsubstituted or substituted C₁-C₁₈alkyl or unsubstituted or substituted aryl; cyano; halogen; nitro;

-COOR₁₁ or -SO₃R₁₁, wherein

R₁₁ is in each case hydrogen, a cation or unsubstituted or substituted C₁-C₁₈alkyl or unsubstituted or substituted aryl; -SR₁₂, -SO₂R₁₂ or -OR₁₂ wherein

R₁₂ is in each case hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or unsubstituted or substituted aryl; -NR₁₃R₁₄; -(C₁-C₆alkylene)-NR₁₃R₁₄; -N⁺R₁₃R₁₄R₁₅; -(C₁-C₆alkylene)-N⁺R₁₃R₁₄R₁₅; -N(R₁₂)-(C₁-C₆alkylene)-N⁺R₁₃R₁₄R₁₅; -N[(C₁-C₆alkylene)-NR₁₃R₁₄]₂; -N(R₁₂)-(C₁-C₆alkylene)-N⁺R₁₃R₁₄R₁₅; -N[(C₁-C₆alkylene)-N⁺R₁₃R₁₄R₁₅]₂; -N(R₁₂)-N-R₁₃R₁₄ or -N(R₁₂)-N⁺R₁₃R₁₄R₁₅, wherein

R₁₂ is as defined above and

R_{13} , R_{14} and R_{15} are each independently of the other(s) hydrogen or unsubstituted or substituted C_1 - C_{18} alkyl or unsubstituted or substituted aryl, or
 R_{13} and R_{14} , together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms.

2. (currently amended): ~~Use-A method according to claim 1, wherein Me is manganese in the oxidation state II, III, IV or V.~~

3. (cancelled).

4. (currently amended): ~~Use-A method according to any one of claims claim 1, 2 and 3,~~ wherein X is CH_3CN , H_2O , F^- , Cl^- , Br^- , HOO^- , O_2^{2-} , O^{2-} , $R_{16}COO^-$, $R_{16}O^-$, $LMeO^-$ or $LMeOO^-$, wherein R_{16} is hydrogen, $-SO_3C_1-C_4$ alkyl or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl, and L and Me are as defined in claim 1.

5. (currently amended): ~~Use-A method according to any one of claims 1 to 4 claim 1,~~ wherein Y is $R_{17}COO^-$, ClO_4^- , BF_4^- , PF_6^- , $R_{17}SO_3^-$, $R_{17}SO_4^-$, SO_4^{2-} , NO_3^- , F^- , Cl^- , Br^- , I^- , citrate, tartrate or oxalate, wherein

R_{17} is hydrogen or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl.

6. (currently amended): ~~Use-A method according to any one of claims 1 to 5 claim 1,~~ wherein n is an integer having a value of from 1 to 4, especially 1 or 2.

7. (currently amended): ~~Use-A method according to any one of claims 1 to 6 claim 1,~~ wherein m is an integer having a value of 1 or 2, especially 1.

8. (currently amended): ~~Use-A method according to any one of claims 1 to 7 claim 1,~~ wherein p is an integer having a value of from 0 to 4, especially 2.

9. (currently amended): ~~Use-A method according to any one of claims 1 to 8 claim 1,~~ wherein z is an integer having a value of from 8- to 8+.

10. (currently amended): ~~Use-A method according to any one of claims 1 to 9~~ claim 1, wherein aryl is phenyl or naphthyl each unsubstituted or substituted by C₁-C₄alkyl, C₁-C₄alkoxy, halogen, cyano, nitro, carboxy, sulfo, hydroxy, amino, N-mono- or N,N-di-C₁-C₄alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety, N-phenylamino, N-naphthylamino, phenyl, phenoxy or by naphthyoxy.

11. (currently amended): ~~Use-A method according to any one of claims 1 to 10~~ claim 1, wherein the 5-, 6- or 7-membered ring formed by R₁₃ and R₁₄ together with the nitrogen atom linking them is an unsubstituted or C₁-C₄alkyl-substituted pyrrolidine, piperidine, piperazine, morpholine or azepane ring wherein the nitrogen atoms may be quaternised.

12. (currently amended): ~~Use-A method according to any one of claims 1 to 11~~ claim 1, wherein R₅ is C₁-C₁₂alkyl; phenyl unsubstituted or substituted by C₁-C₄alkyl, C₁-C₄alkoxy, halogen, cyano, nitro, carboxy, sulfo, hydroxy, amino, N-mono- or N,N-di-C₁-C₄alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety, N-phenylamino, N-naphthylamino, phenyl, phenoxy or by naphthyoxy; cyano; halogen; nitro; -COOR₁₁ or -SO₃R₁₁ wherein R₁₁ is in each case hydrogen, a cation, C₁-C₁₂alkyl, unsubstituted phenyl or phenyl substituted as indicated above; -SR₁₂, -SO₂R₁₂ or -OR₁₂ wherein

R₁₂ is in each case hydrogen, C₁-C₁₂alkyl, unsubstituted phenyl or phenyl substituted as indicated above; -NR₁₃R₁₄; -(C₁-C₆alkylene)-NR₁₃R₁₄; -N[⊕]R₁₃R₁₄R₁₅; -(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅; -N(R₁₂)-(C₁-C₆alkylene)-NR₁₃R₁₄; -N(R₁₂)-(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅; -N(R₁₂)-N-R₁₃R₁₄ or -N(R₁₂)-N[⊕]R₁₃R₁₄R₁₅, wherein

R₁₂ may have one of the above meanings and

R₁₃, R₁₄ and R₁₅ are each independently of the other(s) hydrogen, unsubstituted or hydroxy-substituted C₁-C₁₂alkyl, unsubstituted phenyl or phenyl substituted as indicated above, or R₁₃ and R₁₄, together with the nitrogen atom linking them, form a pyrrolidine, piperidine, piperazine, morpholine or azepane ring unsubstituted or substituted by at least one unsubstituted C₁-C₄alkyl and/or substituted C₁-C₄alkyl, wherein the nitrogen atom may be quaternised, and R₁, R₂, R₃, R₄, R₆, R₇, R₈, R₉ and R₁₀ may be as defined in claim 1 or are hydrogen.

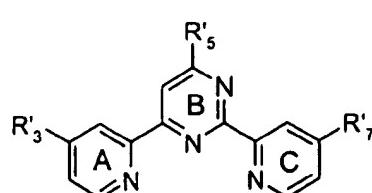
13. (currently amended): ~~Use-A method according to any one of claims 1 to 12~~ claim 1, wherein R₅ is phenyl unsubstituted or substituted by C₁-C₄alkyl, C₁-C₄alkoxy, halogen, phenyl or by hydroxy; cyano; nitro; -COOR₁₁ or -SO₃R₁₁ wherein R₁₁ is in each case hydrogen, a cation, C₁-C₄alkyl or phenyl; -SR₁₂, -SO₂R₁₂ or -OR₁₂ wherein R₁₂ is in each case hydrogen, C₁-C₄alkyl or phenyl; -N(CH₃)-NH₂ or -NH-NH₂; amino; N-mono-

N,N-di-C₁-C₄alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety; or an unsubstituted or C₁-C₄alkyl-substituted pyrrolidine, piperidine, piperazine, morpholine or azepane ring.

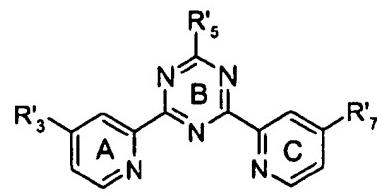
14. (currently amended): Use-A method according to ~~any one of claims 1 to 13~~ claim 1, wherein R₅ in L is C₁-C₄alkoxy; hydroxy; hydrazine; amino; N-mono- or N,N-di-C₁-C₄alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety; or an unsubstituted or C₁-C₄alkyl-substituted pyrrolidine, piperidine, piperazine, morpholine or azepane ring.

15. (currently amended): Use-A method according to ~~any one of claims 1 to 14~~ claim 12, wherein R₁, R₂, R₃, R₄, R₆, R₇, R₈ and R₁₀ in L have the definitions given for R₅ in ~~any one of claims 12 to 14~~ claim 12, but those radicals may additionally be hydrogen.

16. (currently amended): Use-A method according to ~~any one of claims 1 to 15~~ claim 1, wherein L is a compound of formula (3a) and/or (3b)



(3a)



(3b)

wherein R'₃, R'₅ and R'₇ have the definitions given in ~~claims 1 to 15~~ claim 1 for R₃, R₅ and R₇.

17. (currently amended): Use-A method according to ~~any one of claims 1 to 11~~ claim 1, which comprises the use, as a catalyst for oxidation reactions, of at least one metal complex compound of formula (1')



wherein

Me is manganese, titanium, iron, cobalt, nickel or copper,

X is a coordinating or bridging radical,

n and m are each independently of the other an integer having a value of from 1 to 8,

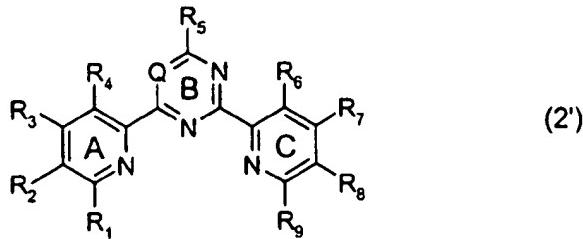
p is an integer having a value of from 0 to 32,

z is the charge of the metal complex,

Y is a counter-ion,

$q = z/(\text{charge of } Y)$, and

L' is a ligand of formula (2')



wherein

Q is N or CR_{10} ,

$R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9$ and R_{10} are each independently of the others hydrogen; unsubstituted or substituted C_1-C_{18} alkyl or unsubstituted or substituted aryl; cyano; halogen; nitro; $-COOR_{11}$ or $-SO_3R_{11}$ wherein

R_{11} is in each case hydrogen, a cation or unsubstituted or substituted C_1-C_{18} alkyl or substituted or unsubstituted aryl; $-SR_{12}$, $-SO_2R_{12}$ or $-OR_{12}$ wherein

R_{12} is in each case hydrogen or unsubstituted or substituted C_1-C_{18} alkyl or unsubstituted or substituted aryl; $-NR_{13}R_{14}$; $-(C_1-C_6\text{alkylene})-NR_{13}R_{14}$; $-N^{\oplus}R_{13}R_{14}R_{15}$; $-(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}$; $-N(R_{12})-(C_1-C_6\text{alkylene})-NR_{13}R_{14}$; $-N[(C_1-C_6\text{alkylene})-NR_{13}R_{14}]_2$; $-N(R_{12})-(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}$; $-N[(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}]_2$; $-N(R_{12})-N-R_{13}R_{14}$ or $-N(R_{12})-N^{\oplus}R_{13}R_{14}R_{15}$, wherein

R_{12} is as defined above and

R_{13}, R_{14} and R_{15} are each independently of the other(s) hydrogen or unsubstituted or substituted C_1-C_{18} alkyl or unsubstituted or substituted aryl, or

R_{13} and R_{14} , together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms,

with the proviso that

at least one of the substituents R_1 to R_{10} contains a quaternised nitrogen atom that is not bonded directly to one of the three rings A, B and/or C.

18. (currently amended): Use-A method according to claim 17, wherein R_5 is not hydrogen.

19. (currently amended): Use-A method according to either claim 17 or claim 18, wherein

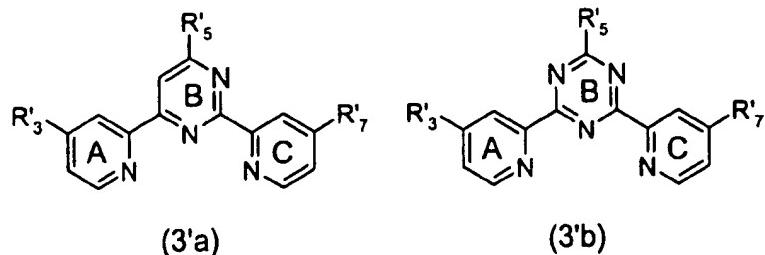
R_5 in L' is phenyl unsubstituted or substituted by C_1 - C_4 alkyl, C_1 - C_4 alkoxy, halogen, phenyl or by hydroxy; cyano; nitro; $-COOR_{11}$ or $-SO_3R_{11}$, wherein

R_{11} , is in each case hydrogen, a cation, C_1 - C_4 alkyl or phenyl; $-SR_{12}$, $-SO_2R_{12}$ or $-OR_{12}$ wherein R_{12} is in each case hydrogen, C_1 - C_{14} alkyl or phenyl; $-N(CH_3)-NH_2$ or $-NH-NH_2$; amino; N-mono- or N,N-di- C_1 - C_4 alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety, wherein the nitrogen atoms, especially the nitrogen atoms not bonded to one of the three rings A, B or G, may be quaternised; N-mono- or N,N-di- C_1 - C_4 alkyl- $N^+R_{13}R_{14}R_{15}$ unsubstituted or substituted by hydroxy in the alkyl moiety, wherein

R_{13} , R_{14} and R_{15} are each independently of the others hydrogen or unsubstituted or hydroxy-substituted C_1 - C_{12} alkyl, unsubstituted phenyl or phenyl substituted as indicated above, or R_{13} and R_{14} , together with the nitrogen atom linking them, form a pyrrolidine, piperidine, piperazine, morpholine or azepane ring unsubstituted or substituted by at least one C_1 - C_4 alkyl or by at least one unsubstituted C_1 - C_4 alkyl and/or substituted C_1 - C_4 alkyl, wherein the nitrogen atom may be quaternised; N-mono- or N,N-di- C_1 - C_4 alkyl- $NR_{13}R_{14}$ unsubstituted or substituted by hydroxy in the alkyl moiety, wherein

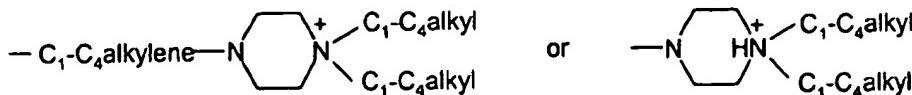
R_{13} and R_{14} may be as defined above.

20. (currently amended): Use A method according to any one of claims 17 to 19 claim 17, wherein L' is a compound of formula (3'a) and/or (3'b)



wherein R'₃, R'₅ and R'₇ have the definitions and preferred meanings indicated above in claim 17 for R₅, but R'₃ and R'₇ may additionally be hydrogen.

21. (currently amended): Use A method according to any one of claims 17 to 20 claim 17, wherein
(i) at least one of the substituents R₃', R₅' and R₇' is one of the radicals



wherein the unbranched or branched alkylene group may be unsubstituted or substituted, and wherein the alkyl groups, which are unbranched or branched independently of one another, may be unsubstituted or substituted and wherein the piperazine ring may be unsubstituted or substituted.

22. (cancelled).

23. (currently amended): Use-A method according to any one of claims 17 to 22 claim 17, wherein L' contains precisely 1, 2 or precisely 3 quaternised nitrogen atoms.

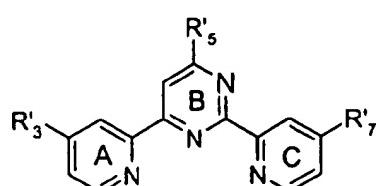
24. (currently amended): Use-A method according to any one of claims 1 to 23, wherein the oxidation is carried out using molecular oxygen and/or air.

25. (currently amended): A metal complex compound of formula (1a)

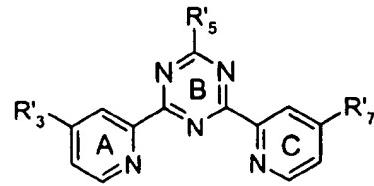


wherein all substituents are as defined in any one of claims 1 to 16 claim 1.

26. (currently amended): A metal complex compound of formula (1a) according to claim 25, wherein L is a compound of formula (3a) and/or (3b)



(3a)



(3b)

wherein

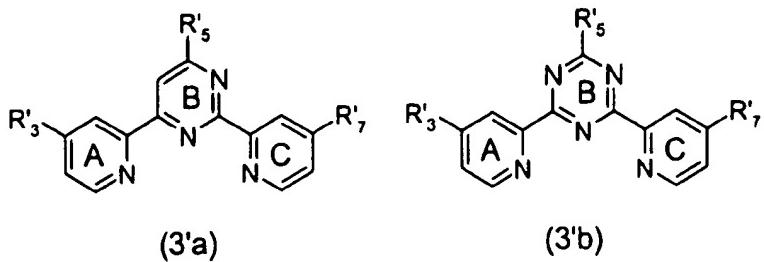
R'_5 is $C_1\text{-}C_4\text{alkoxy}$; hydroxy; N-mono- or N,N-di- $C_1\text{-}C_4\text{alkylamino}$ substituted by hydroxy in the alkyl moiety; or $-\text{NR}_{13}\text{R}_{14}$; $-(C_1\text{-}C_6\text{alkylene})\text{-NR}_{13}\text{R}_{14}$; $-\text{N}(\text{R}_{12})\text{-}(C_1\text{-}C_6\text{alkylene})\text{-NR}_{13}\text{R}_{14}$; $-\text{N}[(C_1\text{-}C_6\text{alkylene})\text{-NR}_{13}\text{R}_{14}]_2$; or $-\text{N}(\text{R}_{12})\text{-N-R}_{13}\text{R}_{14}$, wherein
 R_{12} is hydrogen; $C_1\text{-}C_{12}\text{alkyl}$ or unsubstituted phenyl or phenyl substituted by (substituted in the alkyl moiety by hydroxy) N-mono- or N,N-di- $C_1\text{-}C_4\text{alkylamino}$, N-phenylamino-, N-naphthylamino-, phenyl-, phenoxy- or naphthoxy, and
 R_{13} and R_{14} are each independently of the other hydrogen, unsubstituted or hydroxy-substituted $C_1\text{-}C_{12}\text{alkyl}$, unsubstituted phenyl or phenyl substituted as indicated above, or
 R_{13} and R_{14} , together with the nitrogen atom linking them, form a pyrrolidine, piperidine, piperazine, morpholine or azepane ring that is unsubstituted or substituted by at least one unsubstituted $C_1\text{-}C_4\text{alkyl}$ and/or substituted $C_1\text{-}C_4\text{alkyl}$, especially a pyrrolidine, piperidine, piperazine, morpholine or azepane ring, and
 R'_3 and R'_7 are each independently of the other hydrogen; $C_1\text{-}C_4\text{alkoxy}$; hydroxy; N-mono- or N,N-di- $C_1\text{-}C_4\text{alkylamino}$ substituted by hydroxy in the alkyl moiety; or $-\text{NR}_{13}\text{R}_{14}$; $-(C_1\text{-}C_6\text{alkylene})\text{-NR}_{13}\text{R}_{14}$; $-\text{N}(\text{R}_{12})\text{-}(C_1\text{-}C_6\text{alkylene})\text{-NR}_{13}\text{R}_{14}$; $-\text{N}[(C_1\text{-}C_6\text{alkylene})\text{-NR}_{13}\text{R}_{14}]_2$; or $-\text{N}(\text{R}_{12})\text{-N-R}_{13}\text{R}_{14}$, wherein
 R_{12} is hydrogen; $C_1\text{-}C_{12}\text{alkyl}$ or unsubstituted or (substituted in the alkyl moiety by hydroxy) N-mono- or N,N-di- $C_1\text{-}C_4\text{alkylamino}$, N-phenylamino-, N-naphthylamino-, phenyl-, phenoxy- or naphthoxy-substituted phenyl, and
 R_{13} and R_{14} are each independently of the other hydrogen; unsubstituted or hydroxy-substituted $C_1\text{-}C_{12}\text{alkyl}$, unsubstituted phenyl or phenyl substituted as indicated above, or
 R_{13} and R_{14} , together with the nitrogen atom linking them, form a pyrrolidine, piperidine, piperazine, morpholine or azepane ring that is unsubstituted or substituted by at least one unsubstituted $C_1\text{-}C_4\text{alkyl}$ and/or substituted $C_1\text{-}C_4\text{alkyl}$, especially a pyrrolidine, piperidine, piperazine, morpholine or azepane ring.

27. (currently amended): A metal complex compound of formula (1'a)



wherein all substituents are as defined in claims claim 17 to 23.

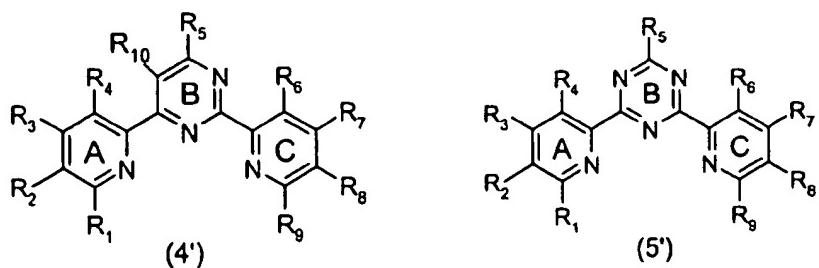
28. (currently amended): A metal complex compound of formula (1'a) according to claim 27, wherein L' is a compound of formula (3'a) and/or (3'b)



wherein R'₃, R'₅ and R', have the definitions and preferred meanings given above for R₅ in claims 17 to 23, but R'₃ and R', may additionally be hydrogen, with the proviso that

- (i) at least one of the substituents R'₃, R'₅ and R'₇ is a radical -(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅; -N(R₁₂)-(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅; -N[(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅]₂; or -N(R₁₂)-N[⊕]R₁₃R₁₄R₁₅, wherein R₁₂ is as defined above and R₁₃, R₁₄ and R₁₅ are each independently of the others hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl, or R₁₃ and R₁₄, together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms; or -NR₁₃R₁₄; -(C₁-C₆alkylene)-NR₁₃R₁₄; -N(R₁₂)-(C₁-C₆alkylene)-NR₁₃R₁₄; -N[(C₁-C₆alkylene)-NR₁₃R₁₄]₂; or -N(R₁₂)-N-R₁₃R₁₄, wherein R₁₂ and R₁₅ are as defined above and R₁₃ and R₁₄, together with the nitrogen atom linking them, form a 5-, 6- or 7-membered ring which may be unsubstituted or substituted by at least one unsubstituted C₁-C₄alkyl and/or substituted C₁-C₄alkyl and may contain further hetero atoms, wherein at least one nitrogen atom not bonded to one of the rings A, B and/or C is quaternised.

29. (currently amended): A ligand L' according to any one of claims 17 to 23, claim 27 and 28 of formula (4') or (5')



wherein

R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉ and R₁₀ are each independently of the others hydrogen; unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl; cyano; halogen; nitro; -COOR₁₁ or -SO₃R₁₁ wherein

R₁₁ is in each case hydrogen, a cation or unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl; -SR₁₂, -SO₂R₁₂ or -OR₁₂ wherein

R₁₂ is in each case hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl; -NR₁₃R₁₄; -(C₁-C₆alkylene)-NR₁₃R₁₄;

-N[⊕]R₁₃R₁₄R₁₅; -(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅; -N(R₁₂)-(C₁-C₆alkylene)-NR₁₃R₁₄;

-N[(C₁-C₆alkylene)-NR₁₃R₁₄]₂; -N(R₁₂)-(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅;

-N[(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅]₂; -N(R₁₂)-N-R₁₃R₁₄ or -N(R₁₂)-N[⊕]R₁₃R₁₄R₁₅, wherein

R₁₂ is as defined above and

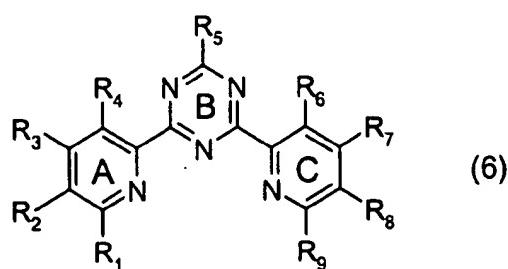
R₁₃, R₁₄ and R₁₅ are each independently of the other(s) hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl, or

R₁₃ and R₁₄, together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms,

with the proviso that

at least one of the substituents R₁ to R₁₀ contains a quaternised nitrogen atom that is not bonded directly to one of the three rings A, B and/or C.

30. (currently amended): A ligand L according to ~~any one of claims 1 to 16, 25 and 26~~ claim 1 of formula (6)



wherein

R₁, R₂, R₄, R₅, R₆, R₇, R₈ and R₉ are each independently of the others hydrogen; unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl; cyano; halogen; nitro; -COOR₁₁ or -SO₃R₁₁ wherein

R_{11} is in each case hydrogen, a cation or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl; $-SR_{12}$, $-SO_2R_{12}$ or $-OR_{12}$ wherein

R_{12} is in each case hydrogen or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl; $-NR_{13}R_{14}$; $-(C_1\text{-}C_6\text{alkylene})\text{-}NR_{13}R_{14}$; $-N^{\oplus}R_{13}R_{14}R_{15}$; $-(C_1\text{-}C_6\text{alkylene})\text{-}N^{\oplus}R_{13}R_{14}R_{15}$; $-N(R_{12})\text{-}(C_1\text{-}C_6\text{alkylene})\text{-}NR_{13}R_{14}$; $-N[(C_1\text{-}C_6\text{alkylene})\text{-}NR_{13}R_{14}]_2$; $-N(R_{12})\text{-}(C_1\text{-}C_6\text{alkylene})\text{-}N^{\oplus}R_{13}R_{14}R_{15}$; $-N[(C_1\text{-}C_6\text{alkylene})\text{-}N^{\oplus}R_{13}R_{14}R_{15}]_2$; $-N(R_{12})\text{-}N\text{-}R_{13}R_{14}$; or $-N(R_{12})\text{-}N^{\oplus}R_{13}R_{14}R_{15}$, wherein

R_{12} is as defined above and

R_{13} , R_{14} and R_{15} are each independently of the other(s) hydrogen or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl, or

R_{13} and R_{14} , together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms,

and

R_3 is phenyl substituted by C_1 - C_4 alkyl, C_1 - C_4 alkoxy, hydroxy, sulfo, sulfato, halogen, cyano, nitro, carboxy, amino, N-mono- or N,N-di- C_1 - C_4 alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety, N-phenylamino, N-naphthylamino, phenyl, phenoxy or by naphthyoxy, substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl; $-CH_3$; C_3 - C_{18} alkyl; cyano; halogen; nitro; $-COOR_{11}$ or $-SO_3R_{11}$ wherein

R_{11} is in each case hydrogen, a cation or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl; $-SR_{12}$, $-SO_2R_{12}$ or $-OR_{12}$ wherein

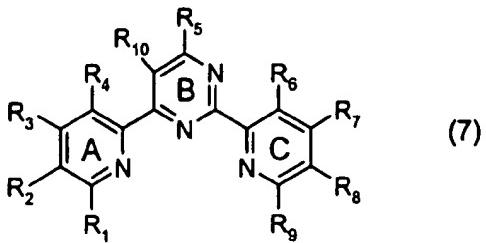
R_{12} is in each case hydrogen or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl; $-NR_{13}R_{14}$; $-(C_1\text{-}C_6\text{alkylene})\text{-}NR_{13}R_{14}$; $-N^{\oplus}R_{13}R_{14}R_{15}$; $-(C_1\text{-}C_6\text{alkylene})\text{-}N^{\oplus}R_{13}R_{14}R_{15}$; $-N(R_{12})\text{-}(C_1\text{-}C_6\text{alkylene})\text{-}NR_{13}R_{14}$; $-N[(C_1\text{-}C_6\text{alkylene})\text{-}NR_{13}R_{14}]_2$; $-N(R_{12})\text{-}(C_1\text{-}C_6\text{alkylene})\text{-}N^{\oplus}R_{13}R_{14}R_{15}$; $-N[(C_1\text{-}C_6\text{alkylene})\text{-}N^{\oplus}R_{13}R_{14}R_{15}]_2$; $-N(R_{12})\text{-}N\text{-}R_{13}R_{14}$; or $-N(R_{12})\text{-}N^{\oplus}R_{13}R_{14}R_{15}$, wherein

R_{12} is as defined above and

R_{13} , R_{14} and R_{15} are each independently of the other(s) hydrogen or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl, or

R_{13} and R_{14} , together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms.

31. (currently amended): A ligand L according to ~~any one of claims 1 to 16, 25 and 26~~ claim 1 of formula (7)



wherein

$R_1, R_2, R_3, R_4, R_5, R_6, R_8$ and R_{10} are each independently of the others hydrogen; unsubstituted or substituted $C_1\text{-}C_{18}\text{alkyl}$ or substituted or unsubstituted aryl; cyano; halogen; nitro; $-\text{COOR}_{11}$ or $-\text{SO}_3\text{R}_{11}$ wherein

R_{11} is in each case hydrogen, a cation or unsubstituted or substituted $C_1\text{-}C_{18}\text{alkyl}$ or substituted or unsubstituted aryl; $-\text{SR}_{12}$, $-\text{SO}_2\text{R}_{12}$ or $-\text{OR}_{12}$ wherein

R_{12} is in each case hydrogen or unsubstituted or substituted $C_1\text{-}C_{18}\text{alkyl}$ or unsubstituted or substituted ~~or unsubstituted~~ aryl; $-\text{NR}_{13}\text{R}_{14}$; $-(C_1\text{-}C_6\text{alkylene})\text{-NR}_{13}\text{R}_{14}$; $-\text{N}^\oplus\text{R}_{13}\text{R}_{14}\text{R}_{15}$; $-(C_1\text{-}C_6\text{alkylene})\text{-N}^\oplus\text{R}_{13}\text{R}_{14}\text{R}_{15}$; $-\text{N}[(C_1\text{-}C_6\text{alkylene})\text{-NR}_{13}\text{R}_{14}]_2$; $-\text{N}(\text{R}_{12})\text{-}(C_1\text{-}C_6\text{alkylene})\text{-N}^\oplus\text{R}_{13}\text{R}_{14}\text{R}_{15}$; $-\text{N}[(C_1\text{-}C_6\text{alkylene})\text{-N}^\oplus\text{R}_{13}\text{R}_{14}\text{R}_{15}]_2$; $-\text{N}(\text{R}_{12})\text{-N-R}_{13}\text{R}_{14}$ or $-\text{N}(\text{R}_{12})\text{-N}^\oplus\text{R}_{13}\text{R}_{14}\text{R}_{15}$, wherein

R_{12} is as defined above and

R_{13}, R_{14} and R_{15} are each independently of the other(s) hydrogen or unsubstituted or substituted $C_1\text{-}C_{18}\text{alkyl}$ or substituted or unsubstituted aryl, or

R_{13} and R_{14} , together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms,

and

R_7 is phenyl substituted by $C_1\text{-}C_4\text{alkyl}$, $C_1\text{-}C_4\text{alkoxy}$, hydroxy, sulfo, sulfato, halogen, cyano, nitro, carboxy, amino, N-mono- or N,N-di- $C_1\text{-}C_4\text{alkylamino}$ unsubstituted or substituted by hydroxy in the alkyl moiety, N-phenylamino, N-naphthylamino, phenyl, phenoxy or by naphthoxy, substituted $C_1\text{-}C_{18}\text{alkyl}$ or substituted or unsubstituted aryl; $-\text{CH}_3$; $C_3\text{-}C_{18}\text{alkyl}$; cyano; F; Br; I; nitro; $-\text{COOR}_{11}$ or $-\text{SO}_3\text{R}_{11}$ wherein

R_{11} is in each case hydrogen, a cation or unsubstituted or substituted $C_1\text{-}C_{18}\text{alkyl}$ or substituted or unsubstituted aryl; $-\text{SR}_{12}$, $-\text{SO}_2\text{R}_{12}$ or $-\text{OR}_{12}$ wherein

R_{12} is in each case hydrogen or unsubstituted or substituted $C_1\text{-}C_{18}\text{alkyl}$ or unsubstituted or substituted aryl; $-\text{NR}_{13}\text{R}_{14}$; $-(C_1\text{-}C_6\text{alkylene})\text{-NR}_{13}\text{R}_{14}$; $-\text{N}^\oplus\text{R}_{13}\text{R}_{14}\text{R}_{15}$; $-(C_1\text{-}C_6\text{alkylene})\text{-N}^\oplus\text{R}_{13}\text{R}_{14}\text{R}_{15}$; $-\text{N}(\text{R}_{12})\text{-}(C_1\text{-}C_6\text{alkylene})\text{-NR}_{13}\text{R}_{14}$; $-\text{N}[(C_1\text{-}C_6\text{alkylene})\text{-NR}_{13}\text{R}_{14}]_2$; $-\text{N}(\text{R}_{12})\text{-}(C_1\text{-}C_6\text{alkylene})\text{-N}^\oplus\text{R}_{13}\text{R}_{14}\text{R}_{15}$;

$-N[(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}]_2$; $-N(R_{12})-N-R_{13}R_{14}$; or $-N(R_{12})-N^{\oplus}R_{13}R_{14}R_{15}$, wherein

R_{12} is as defined above and

R_{13} , R_{14} and R_{15} are each independently of the other(s) hydrogen or unsubstituted or substituted

$C_1-C_{18}\text{alkyl}$ or substituted or unsubstituted aryl, or

R_{13} and R_{14} , together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms.

32. (currently amended): A detergent, cleaning, disinfecting or bleaching composition containing

- I) from 0 to 50% A) of an anionic surfactant and/or B) of a non-ionic surfactant,
- II) from 0 to 70% C) of a builder substance,
- III) from 1 to 99% D) of a peroxide,
- IV) E) at least one metal complex compound of formula (1) ~~and/or (1') of any one of claims of claim 25 to 28~~ in an amount that, in the liquor, gives a concentration of from 0.5 to 50 mg/litre of liquor, ~~preferably from 1 to 30 mg/litre of liquor~~, when from 0.5 to 20 g/litre of the detergent, cleaning, disinfecting or bleaching agent are added to the liquor, the percentages in each case being percentages by weight, based on the total weight of the composition, and
- V) water ad 100%.

33. (currently amended): A solid formulation containing

- a) from 1 to 99% by weight of a metal complex compound of formula (1) ~~and/or (1') of any one of claims of claim 25 to 28~~,
- b) from 1 to 99% by weight of a binder,
- c) from 0 to 20% by weight of an encapsulating material,
- d) from 0 to 20% by weight of a further additive and
- e) from 0 to 20% by weight of water.

34. (original): A solid formulation according to claim 33, which is in the form of tablets or granules.

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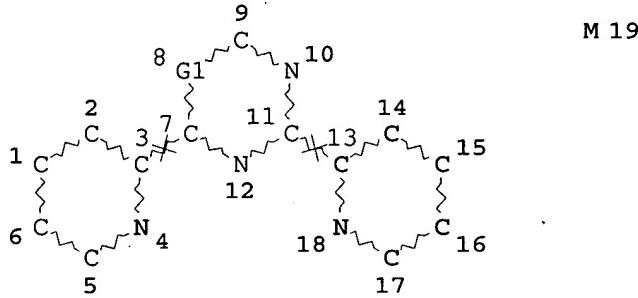
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L2 31 S E1-E31
L3 STR
L4 6 S L3
L5 SCR 1991 OR 1966 OR 1965 OR 1920
L6 17 S L3 AND L5
L7 466 S L3 AND L5 FUL
L8 2 S L7 AND L2
 SAV L7 DEL906/A

FILE 'HCAPLUS' ENTERED AT 11:44:59 ON 24 MAY 2006
L9 107 S L7
L10 12 S L9 AND CATALY?
L11 4 S L9 AND DETERG?/SC, SX
L12 25 S L9 AND OXIDAT?
L13 34 S L10-L12
L14 1 S L13 AND L1
L15 9 S L9 AND CAT/RL
L16 35 S L13 OR L15

=> d que l16

L3 STR



VAR G1=C/N

NODE ATTRIBUTES:

NSPEC IS RC AT 19
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 19

STEREO ATTRIBUTES: NONE

L5 SCR 1991 OR 1966 OR 1965 OR 1920
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L9 107 SEA FILE=HCAPLUS ABB=ON PLU=ON L7
L10 12 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND CATALY?

L11 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND DETERG?/SC,SX
 L12 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND OXIDAT?
 L13 34 SEA FILE=HCAPLUS ABB=ON PLU=ON (L10 OR L11 OR L12)
 L15 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND CAT/RL
 L16 35 SEA FILE=HCAPLUS ABB=ON PLU=ON L13 OR L15

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L16 ANSWER 1 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2005:1317796 HCAPLUS
 DOCUMENT NUMBER: 144:224855
 TITLE: Synthesis, characterization and biological activity of ternary copper(II) complexes containing polypyridyl ligands
 AUTHOR(S): Patel, R. N.; Singh, Nripendra; Shukla, K. K.; Gundla, V. L. N.; Chauhan, U. K.
 CORPORATE SOURCE: Department of Chemistry, School of Environment Biology, A.P.S. University, Rewa, MP, 486003, India
 SOURCE: Spectrochimica Acta, Part A: Molecular and Biomolecular Spectroscopy (2006), 63A(1), 21-26
 CODEN: SAMCAS; ISSN: 1386-1425
 PUBLISHER: Elsevier B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Ternary Cu(II) complexes involving polypyridyl ligands in the coordination sphere [Cu(tpy)(phen)](ClO₄)₂ (1), [Cu(tpy)(bipy)](ClO₄)₂ (2), [Cu(tptz)(phen)](ClO₄)₂ (3) and [Cu(tptz)(bipy)](BF₄)₂ (4) where tpy = 2,2':6',2''-terpyridine, tptz = 2,4,6-tri(2-pyridyl)-1,3,5-triazine, phen = 1,10-phenanthroline and bipy = 2,2'-bipyridine were synthesized and characterized by elemental anal., magnetic susceptibility, X-band EPR spectroscopy and electronic spectroscopy. Single crystal x-ray of (1) revealed a distorted square pyramidal geometry in the complex. Magnetic susceptibility measurements at room temperature were at 1.77-1.81 μB. SOD and antimicrobial activities of these complexes were also measured. Crystal data of 1: P.hivin.1, a 9.3010(7), b 9.7900(6), c 16.4620(6) Å, Vc = 1342.73(14) Å³, Z = 4. The bond distance of Cu-N in square base is 2 ± 0.04 Å.

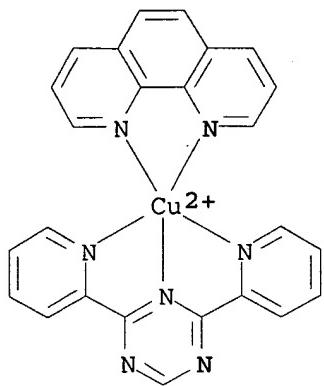
IT 875557-32-7P 875557-34-9P
 (preparation, SOD activity and antifungal and antibacterial activities of)

RN 875557-32-7 HCAPLUS

CN INDEX NAME NOT YET ASSIGNED

CM 1

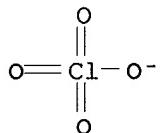
CRN 875557-31-6
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CM 2

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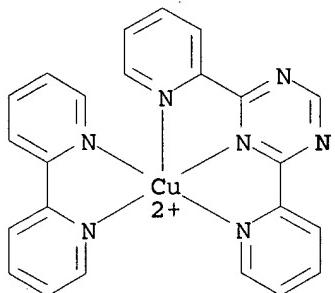
CMF Cl O4



RN 875557-34-9 HCAPLUS
 CN INDEX NAME NOT YET ASSIGNED

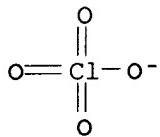
CM 1

CRN 875557-33-8
 CMF C23 H17 Cu N7
 CCI CCS



CM 2

CRN 14797-73-0
 CMF Cl O4



CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 7, 10, 75
 IT 9054-89-1, Superoxide dismutase
 (copper polypyridyl ternary complexes as mimic for
 catalysis of dismutation of superoxide)
 IT 25970-70-1P 875557-32-7P 875557-34-9P
 (preparation, SOD activity and antifungal and antibacterial
 activities of)
 REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L16 ANSWER 2 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2005:1200315 HCAPLUS
 DOCUMENT NUMBER: 143:462161
 TITLE: Use of metal complexes having
 bispyridylpyrimidine or bispyridyltriazine
 ligands as catalysts for reactions
 with peroxy compounds for bleaching colored
 stains on hard surfaces
 INVENTOR(S): Wieprecht, Torsten; Dubs, Marie-Josee;
 Schlingloff, Gunther
 PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.
 SOURCE: PCT Int. Appl., 95 pp.
 CODEN: PIIXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2005105303	A1	20051110	WO 2005-EP51732	2005 0420

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
 KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,
 MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH,
 PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM,
 TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
 ZW, AM, AZ, BY; KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,
 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT,
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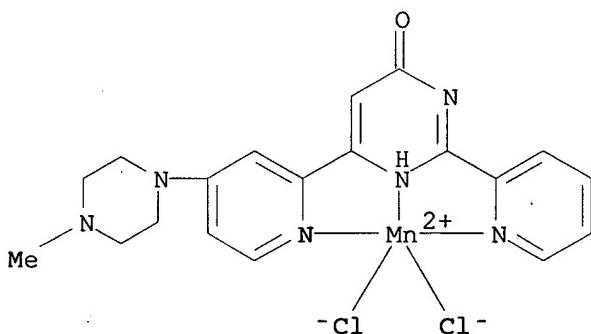
PRIORITY APPLN. INFO.: EP 2004-101821 A
 2004
 0429

AB The present invention relates to the use of certain manganese complexes having bispyridylpyrimidine or bispyridyltriazine ligands or mixts. of such ligands as **catalysts** for reactions with peroxy compds. for bleaching colored stains on hard surfaces, especially dishes in automatic dishwashers. The invention relates also to cleaning formulations for hard surfaces comprising such **catalysts**. Thus, 0.130 mol DMF and 4.06 mol thionyl chloride were stirred, 0.812 mol picolinic acid was added therein and heated at 70° for 24 h, 114 mol of the resulting 4-chloropyridine-2-carboxylic acid Et ester was reacted with 100 mmol sodium hydride and 114 mmol Et acetate, stirred for 12 h at room temperature to give 14.5 g 3-(4-chloropyrid-2-yl)-3-oxopropionic acid Et ester, 12.3 mol of which was reacted with 303 mmol 1-methylpiperazine, refluxed for 22 h to give 6-[4-(4-methyl-piperazin-1-yl)-pyrid-2-yl]-2-pyrid-2-yl-pyrimidin-4-ol, 2.5 mmol of which was reacted with 2.5 mmol manganese chloride tetrahydrate to give a metal complex, showing good bleaching effect on tea-stained cup when formulated (20 µM) with 44 mM hydrogen peroxide.

IT 860469-44-9P, 6-[4-(4-Methyl-piperazin-1-yl)-pyrid-2-yl]-2-pyrid-2-yl-pyrimidin-4-ol manganese dichloride complex
 860469-45-0P, 6-[4-(4-Methyl-piperazin-1-yl)-pyrid-2-yl]-2-pyrid-2-yl-pyrimidin-4-ol methyl iodide manganese dichloride complex 869111-82-0P, 2,6-Di(2-pyridyl)-4-pyridiminol manganese dichloride complex 869111-83-1P,
 2,6-Bis[4-(4-methyl-piperazin-1-yl)-pyrid-2-yl]-pyrimidin-4-ol manganese dichloride complex 869111-84-2P,
 2,6-Bis[4-(4-methyl-piperazin-1-yl)-pyrid-2-yl]-pyrimidin-4-ol di(methyl iodide) manganese dichloride complex
 (**catalyst**; production of metal complexes having bispyridylpyrimidine or bispyridyltriazine ligands as **catalysts** for bleaching colored stains on hard surfaces)

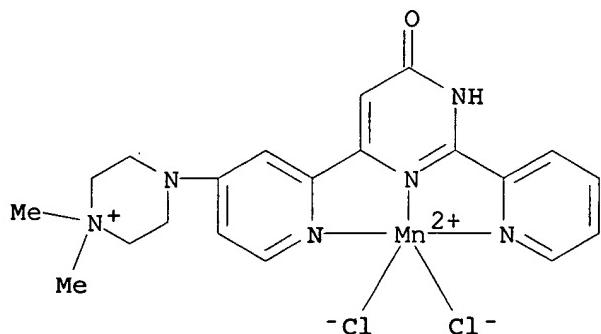
RN 860469-44-9 HCAPLUS

CN Manganese, dichloro[6-[4-(4-methyl-1-piperazinyl)-2-pyridinyl-κN]-2-(2-pyridinyl-κN)-4(1H)-pyrimidinone-κN1]- (9CI) (CA INDEX NAME)



RN 860469-45-0 HCAPLUS

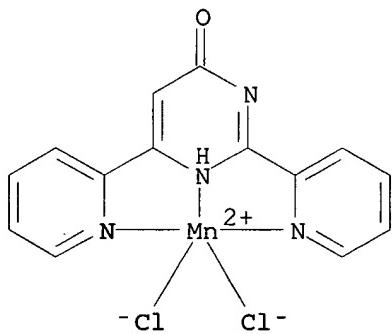
CN Manganese(1+), dichloro[4-[2-[1,6-dihydro-6-oxo-2-(2-pyridinyl-κN)-4-pyrimidinyl-κN3]-4-pyridinyl-κN]-1,1-dimethylpiperazinium] -, iodide (9CI) (CA INDEX NAME)



● I -

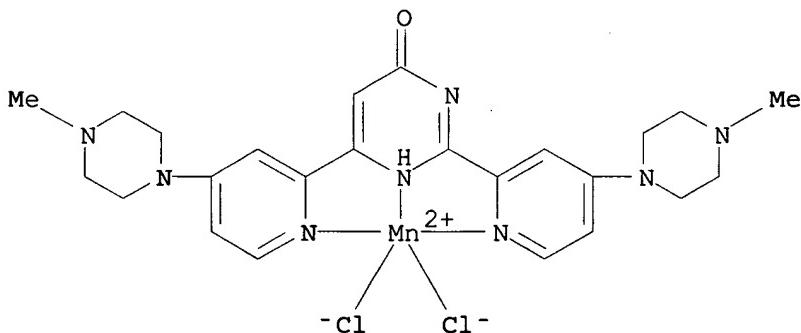
RN 869111-82-0 HCAPLUS

CN Manganese, dichloro[2,6-di(2-pyridinyl- κ N)-4(1H)-pyrimidinone- κ N1]- (9CI) (CA INDEX NAME)



RN 869111-83-1 HCAPLUS

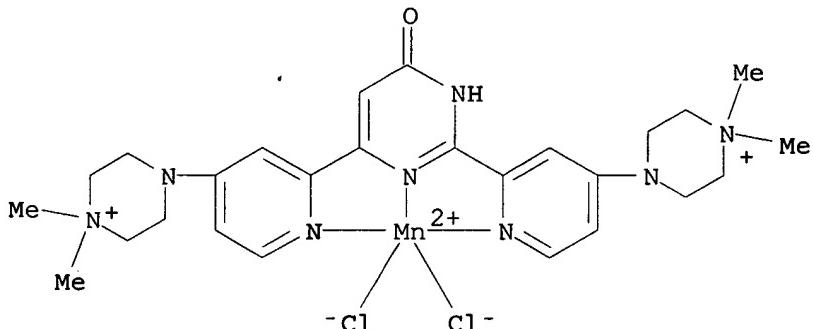
CN Manganese, [2,6-bis[4-(4-methyl-1-piperazinyl)-2-pyridinyl- κ N]-4(1H)-pyrimidinone- κ N1]dichloro- (9CI) (CA INDEX NAME)



RN 869111-84-2 HCAPLUS

CN Manganese(2+), dichloro[4,4'-(1,6-dihydro-6-oxo-2,4-

pyrimidinediyl- κ N3)di(2,4-pyridinediyl- κ N)]bis[1,1-dimethylpiperazinium] -, diiodide (9CI) (CA INDEX NAME)



●2 I-

- IC ICM B01J031-18
 ICS C07F013-00; C07D401-14; C11D003-395; C11D003-39; C11D011-00;
 C11D011-02; C11D017-00; C11D017-06; C07D239-00; C07D213-00
- CC 46-6 (Surface Active Agents and Detergents)
 Section cross-reference(s): 27, 67
- ST metal complex bispyridylpyrimidine bispyridyltriazine ligand;
catalyst reaction peroxy compd bleaching colored stain
 hard surface; DMF picolinic acid ethyl acetate methylpiperazine
 reactant ligand; manganese methylpiperazinylpyridylpyridylpyrimidi-
 nol complex **catalyst** prepn
- IT Detergents
 (bleaching; production of metal complexes having
 bispyridylpyrimidine or bispyridyltriazine ligands as
catalysts for bleaching colored stains on hard
 surfaces)
- IT Coordination compounds
 (**catalyst**; production of metal complexes having
 bispyridylpyrimidine or bispyridyltriazine ligands as
catalysts for bleaching colored stains on hard
 surfaces)
- IT Detergents
 (dishwashing; production of metal complexes having
 bispyridylpyrimidine or bispyridyltriazine ligands as
catalysts for bleaching colored stains on hard
 surfaces)
- IT Detergents
 (production of metal complexes having bispyridylpyrimidine or
 bispyridyltriazine ligands as **catalysts** for bleaching
 colored stains on hard surfaces)
- IT Ligands
 (production of metal complexes having bispyridylpyrimidine or
 bispyridyltriazine ligands as **catalysts** for bleaching
 colored stains on hard surfaces)
- IT 860469-44-9P, 6-[4-(4-Methyl-piperazin-1-yl)-pyrid-2-yl]-2-
 pyrid-2-yl-pyrimidin-4-ol manganese dichloride complex
 860469-45-0P, 6-[4-(4-Methyl-piperazin-1-yl)-pyrid-2-yl]-2-
 pyrid-2-yl-pyrimidin-4-ol methyl iodide manganese dichloride
 complex 869111-82-0P, 2,6-Di(2-pyridyl)-4-pyridiminol

- manganese dichloride complex 869111-83-1P,
 2,6-Bis[4-(4-methyl-piperazin-1-yl)-pyrid-2-yl]-pyrimidin-4-ol
 manganese dichloride complex 869111-84-2P,
 2,6-Bis[4-(4-methyl-piperazin-1-yl)-pyrid-2-yl]-pyrimidin-4-ol
 di(methyl iodide) manganese dichloride complex
 (catalyst; production of metal complexes having
 bispyridylpyrimidine or bispyridyltriazine ligands as
 catalysts for bleaching colored stains on hard
 surfaces)
- IT 19235-89-3P, 4-Chloro-2-cyanopyridine 64064-56-8P,
 4-Chloropyridine-2-carboxylic acid ethyl ester 99586-65-9P,
 4-Chloropicolinamide 688753-54-0P, 3-(4-Chloropyrid-2-yl)-3-
 oxopropionic acid ethyl ester 688753-55-1P, 6-(4-Chloropyrid-2-
 yl)-2-pyrid-2-yl-pyrimidin-4-ol 688753-58-4P
 (intermediate in ligand preparation; production of metal complexes
 having bispyridylpyrimidine or bispyridyltriazine ligands as
 catalysts for bleaching colored stains on hard
 surfaces)
- IT 75239-97-3P, 4,6-Dipyrid-2-yl-[1,3,5]triazin-2-ylamine
 688753-56-2P, 6-[4-(4-Methyl-piperazin-1-yl)-pyrid-2-yl]-2-pyrid-2-
 yl-pyrimidin-4-ol 688753-57-3P, 6-[4-(4-Methyl-piperazin-1-yl)-
 pyrid-2-yl]-2-pyrid-2-yl-pyrimidin-4-ol methyl iodide
 688753-59-5P, 2,6-Bis(4-chloropyrid-2-yl)-pyrimidin-4-ol
 688753-60-8P, 2,6-Bis[4-(4-methyl-piperazin-1-yl)-pyrid-2-yl]-
 pyrimidin-4-ol 688753-61-9P, 2,6-Bis[4-(4-methyl-piperazin-1-yl)-
 pyrid-2-yl]-pyrimidin-4-ol di(methyl iodide) 688753-62-0P,
 4,6-Dipyrid-2-yl-[1,3,5]triazin-2-ol
 (ligand; production of metal complexes having bispyridylpyrimidine
 or bispyridyltriazine ligands as catalysts for
 bleaching colored stains on hard surfaces)
- IT 10239-68-6, 2,6-Di(2-pyridyl)-4-pyridiminol
 (ligand; production of metal complexes having bispyridylpyrimidine
 or bispyridyltriazine ligands as catalysts for
 bleaching colored stains on hard surfaces)
- IT 13446-34-9, Manganese chloride tetrahydrate
 (reactant in catalyst preparation; production of metal
 complexes having bispyridylpyrimidine or bispyridyltriazine
 ligands as catalysts for bleaching colored stains on
 hard surfaces)
- IT 50-01-1, Guanidine hydrochloride 57-13-6, Urea, reactions
 64-17-5, Ethanol, reactions 68-12-2, DMF, reactions 74-88-4,
 Methyl iodide, reactions 98-98-6, Picolinic acid 100-70-9,
 2-Cyanopyridine 109-01-3, 1-Methyl-piperazine 141-78-6, Ethyl
 acetate, reactions 7719-09-7, Thionyl chloride 51285-26-8,
 2-Amidinopyridine hydrochloride
 (reactant in ligand preparation; production of metal complexes having
 bispyridylpyrimidine or bispyridyltriazine ligands as
 catalysts for bleaching colored stains on hard
 surfaces)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L16 ANSWER 3 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2005:673179 HCAPLUS
 DOCUMENT NUMBER: 143:175164
 TITLE: Metal complex compounds and their use as
 catalysts for oxidations
 with peroxy acids and/or precursors of organic
 peroxy acid and hydrogen peroxide

INVENTOR(S) : Wieprecht, Torsten; Heinz, Uwe; Xia, Juntao;
 Schlingloff, Gunther; Dubs, Marie-Josée
 PATENT ASSIGNEE(S) : Ciba Specialty Chemicals Holding Inc., Switz.
 SOURCE: PCT Int. Appl., 88 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2005068074	A2	20050728	WO 2005-EP50000	2005 0103

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
 KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
 MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,
 PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,
 TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,
 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT,
 LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF,
 CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: EP 2004-100078 A
 2004
 0112

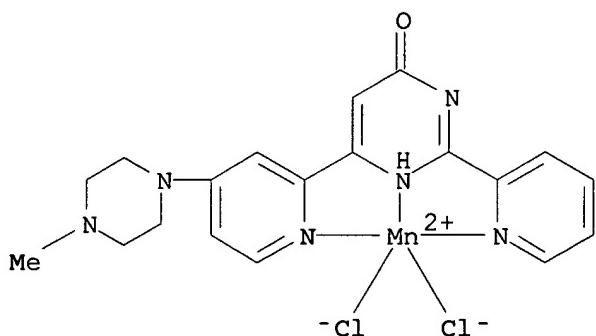
OTHER SOURCE(S) : MARPAT 143:175164

AB The invention accordingly relates to the use as catalysts of at least one metal complex $[LnMemXp]_zYq$ (I), wherein all substituents have the meanings as defined in the claims for oxidation reactions with organic peroxy acids and/or precursors of organic peroxy acid and H_2O_2 , as well as to detergent compns. In I, Me is manganese; titanium; iron; cobalt; nickel or copper, X is a coordinating or bridging radical, n and m are 1 to 8, p is 0 to 32, z is the charge of the metal complex, Y is a counter-ion, q = $z/(charge\ of\ Y)$, and 15 L is a tricyclic compound ligand. A manganese(II) complex with 1,1-dimethyl-4-(4'-oxo-1',4'-dihydro-[2,2';6',2"]terpyrid-4-yl)-piperazin-1-ium methosulfate was prepared and used as a catalyst for stain-removing bleaching with peracetic acid.

IT 860469-44-9P 860469-45-0P
 (metal complex compds. and their use as catalysts for oxidns. with peroxy acids and/or precursors of organic peroxy acid and hydrogen peroxide)

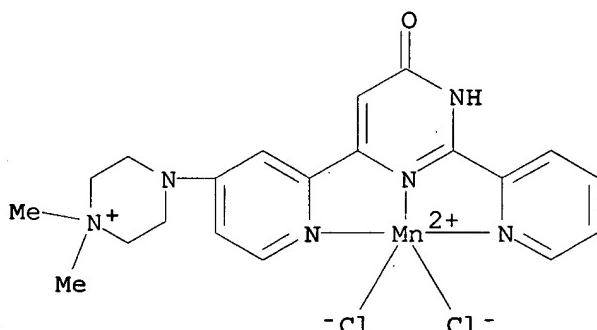
RN 860469-44-9 HCAPLUS

CN Manganese, dichloro[6-[4-(4-methyl-1-piperazinyl)-2-pyridinyl- κN]-2-(2-pyridinyl- κN)-4(1H)-pyrimidinone- $\kappa N1$]-
 (9CI) (CA INDEX NAME)



RN 860469-45-0 HCAPLUS

CN Manganese(1+), dichloro[4- [2-[1,6-dihydro-6-oxo-2-(2-pyridinyl- κN)-4-pyrimidinyl- κN]-4-pyridinyl- κN]-1,1-dimethylpiperazinium] -, iodide (9CI) (CA INDEX NAME)



● I -

IC ICM B01J031-18

ICS B01J031-04; C07F013-00; C07D213-22; C07D401-14; C11D003-395;
D06L003-02; D06M011-50; D21C009-10; A61L002-18; A61L012-12;
C07B033-00; C07D301-14

CC 46-4 (Surface Active Agents and Detergents)

Section cross-reference(s) : 78

ST metal complex catalyst oxidn peroxy acid
hydrogen peroxide

IT Bleaching

Cleaning

Detergents

Disinfectants

Oxidation catalysts

(metal complex compds. and their use as catalysts for
oxidns. with peroxy acids and/or precursors of organic
peroxy acid and hydrogen peroxide)

IT Coordination compounds

(metal complex compds. and their use as catalysts for
oxidns. with peroxy acids and/or precursors of organic
peroxy acid and hydrogen peroxide)

IT 474491-21-9P 688741-04-0P 688741-05-1P 688741-07-3P

860469-42-7P 860469-43-8P 860469-44-9P

860469-45-0P

(metal complex compds. and their use as catalysts for oxidns. with peroxy acids and/or precursors of organic peroxy acid and hydrogen peroxide)

IT 109-01-3P, 1-Methyl-piperazine 19235-89-3P, 4-Chloro-2-cyanopyridine 40614-52-6P, 1-Pyrid-2-yl-butane-1,3-dione 64064-56-8P, 4-Chloro-pyridine-2-carboxylic acid ethyl ester 75239-97-3P 648431-07-6P 648431-08-7P 648431-09-8P 648431-11-2P 648431-12-3P 648431-17-8P 648431-18-9P 648431-19-0P 648431-20-3P 648431-21-4P 648431-23-6P 688753-55-1P 688753-56-2P 688753-57-3P 688753-58-4P 688753-59-5P 688753-60-8P 688753-61-9P 688753-62-0P

(metal complex compds. and their use as catalysts for oxidns. with peroxy acids and/or precursors of organic peroxy acid and hydrogen peroxide)

IT 50-01-1, Guanidine hydrochloride 57-13-6, Urea, reactions 98-98-6, Picolinic acid 100-70-9, 2-Cyanopyridine 142-25-6, N,N,N',N'-Trimethyl-ethane-1,2-diamine 2524-52-9 13446-34-9, Manganese(II) chloride tetrahydrate 51285-26-8, 2-Amidinopyridine hydrochloride

(metal complex compds. and their use as catalysts for oxidns. with peroxy acids and/or precursors of organic peroxy acid and hydrogen peroxide)

L16 ANSWER 4 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:439786 HCAPLUS

DOCUMENT NUMBER: 143:305849

TITLE: Reactions of 2,4,6-triptyridyl-1,3,5-s-triazine and its Fe(II) complex with OH⁻ and eaq-

AUTHOR(S): Hela, Pamidipati Gayatri; Reddy, Ramireddy Nageswara; Anipindi, Nageswara Rao;

CORPORATE SOURCE: Priyadarsini, K. Indira; Mukherji, Tulsi Department of Chemistry, National Tsing Hua University, Hsinchu, Taiwan

SOURCE: Reaction Kinetics and Catalysis Letters (2005), 85(1), 79-87

CODEN: RKCLAU; ISSN: 0133-1736

PUBLISHER: Akademiai Kiado

DOCUMENT TYPE: Journal

LANGUAGE: English

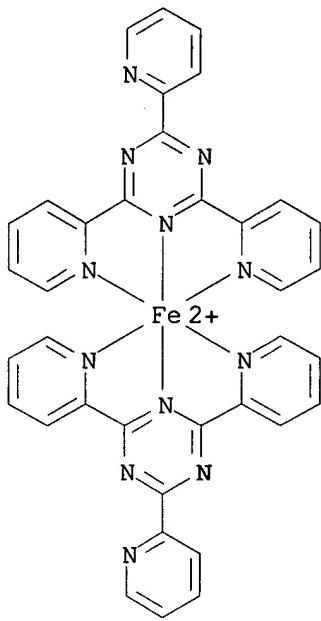
AB Pulse radiolysis studies indicated that OH⁻ and eaq- formed adducts with 2,4,6-triptyridyl-1,3,5-s-triazine (tptz). The OH-adduct showed an absorption maximum at 290 nm, while the adduct formed from the attack of eaq- and subsequent protonation of the anion, has an absorption maximum at 300 nm. In case of the complex, Fe(tptz)²⁺, both OH⁻ and eaq- gave ligand centered adducts. All the adducts decayed by second order dimerization or disproportionation, a disproportionation reaction in case of the complex.

IT 22452-38-6

(absorption spectroscopy on reactions of 2,4,6-triptyridyl-1,3,5-s-triazine and Fe(II) complex with oh⁻ and eaq-)

RN 22452-38-6 HCAPLUS

CN Iron(2+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 22-9 (Physical Organic Chemistry)
Section cross-reference(s): 73, 74

IT Oxidation
Reduction
UV and visible spectra

(absorption spectroscopy on reactions of 2,4,6-tripyridyl-1,3,5-s-triazine and Fe(II) complex with OH^- and $\text{aq}-$)

IT 3352-57-6, Hydroxy, reactions 3682-35-7 22452-38-6
(absorption spectroscopy on reactions of 2,4,6-tripyridyl-1,3,5-s-triazine and Fe(II) complex with OH^- and $\text{aq}-$)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 5 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:364179 HCPLUS

DOCUMENT NUMBER: 143:317716

TITLE: CoII complexes of triazine-based tridentate ligands with positive and attractive CoII/III redox couples

AUTHOR(S): Medlycott, Elaine A.; Theobald, Isabelle;
Hanan, Garry S.

CORPORATE SOURCE: Departement de Chimie, Universite de Montreal,
Montreal, QC, H3T 1J4, Can.

SOURCE: European Journal of Inorganic Chemistry
(2005), (7), 1223-1226

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal

LANGUAGE: English

AB CoII complexes based on the triazine ligand 2,4-di(2'-pyridyl)-6-(p-R-C6H4)-1,3,5-triazine were synthesized and characterized.
Cyclic voltammetry shows that the CoII/III redox couple is more pos. than previously described Co complexes of tridentate ligands.
The CoII/III redox couple may be varied depending on the nature of

the substituent on the Ph ring of the triazine ligand.

IT 864653-14-5P 864653-16-7P
 (preparation and electrochem. redox and conversion to cobalt chloro triazine derivative complex)

RN 864653-14-5 HCAPLUS

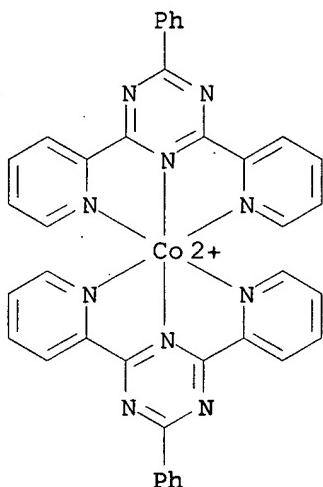
CN Cobalt(2+), bis[2-phenyl-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N5]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 864653-13-4

CMF C38 H26 Co N10

CCI CCS

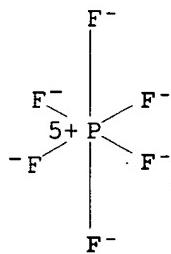


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



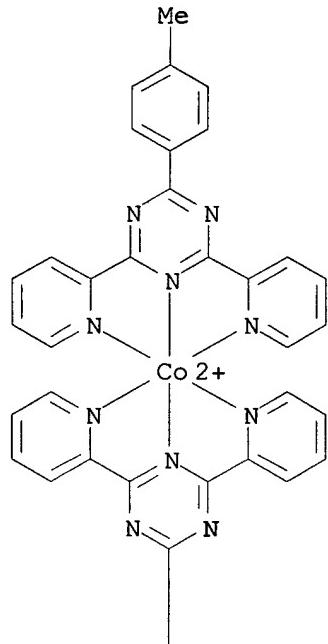
RN 864653-16-7 HCAPLUS

CN Cobalt(1+), bis[2-(4-methylphenyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N5]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

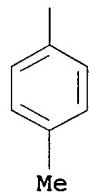
CM 1

CRN 864653-15-6
CMF C40 H30 Co N10
CCI CCS

PAGE 1-A

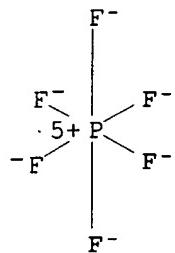


PAGE 2-A



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



IT 864653-18-9P

(preparation and electrochem. redox and crystal structure and conversion to cobalt chloro triazine derivative complex)

RN 864653-18-9 HCAPLUS

CN Cobalt(1+), bis[2-(4-bromophenyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN5]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

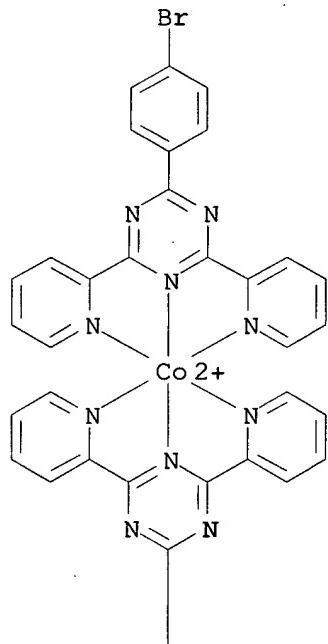
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CRN 864653-17-8

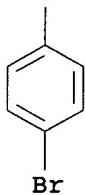
CMF C38 H24 Br2 Co N10

CCI CCS

PAGE 1-A

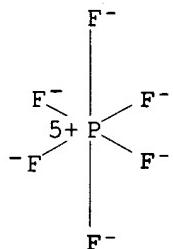


PAGE 2-A



CM 2

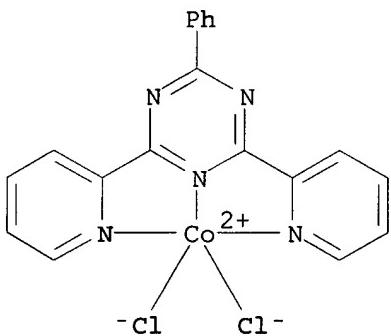
CRN 16919-18-9
CMF F6 P
CCI CCS



IT 864653-19-0P 864653-20-3P 864653-21-4P
(preparation of)

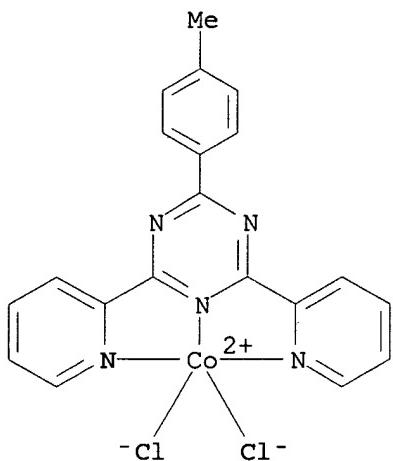
RN 864653-19-0 HCAPLUS

CN Cobalt, dichloro[4-phenyl-2,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N1] - (9CI) (CA INDEX NAME)



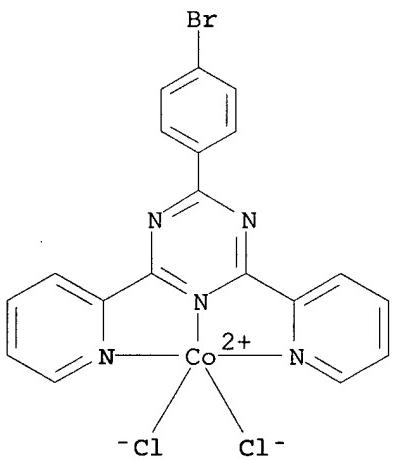
RN 864653-20-3 HCPLUS

CN Cobalt, dichloro[4-(4-methylphenyl)-2,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N1]- (9CI) (CA INDEX NAME)



RN 864653-21-4 HCPLUS

CN Cobalt, [4-(4-bromophenyl)-2,6-di(2-pyridinyl- κN)-1,3,5-triazine- $\kappa\text{N}1$]dichloro- (9CI) (CA INDEX NAME)



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 72, 75

IT Crystal structure

Molecular structure

Oxidation, electrochemical

Oxidation potential

Reduction, electrochemical

Reduction potential

(of cobalt triazine derivative complexes)

IT 864653-14-5P 864653-16-7P

(preparation and electrochem. redox and conversion to cobalt chloro triazine derivative complex)

IT 864653-18-9P

(preparation and electrochem. redox and crystal structure and conversion to cobalt chloro triazine derivative complex)

IT 864653-19-0P 864653-20-3P 864653-21-4P

(preparation of)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE

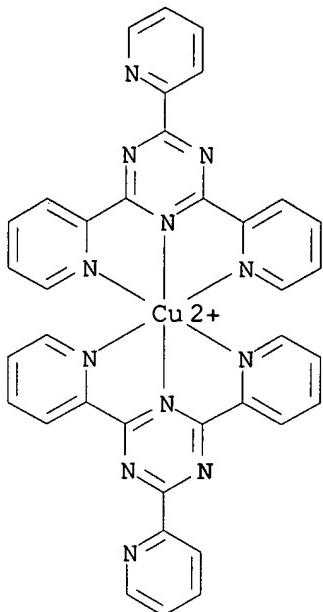
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 6 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2005:264251 HCAPLUS
 DOCUMENT NUMBER: 144:54244
 TITLE: Electrochemical reduction of oxygen and hydrogen peroxide **catalyzed** by a surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on a graphite electrode
 AUTHOR(S): Dias, Vera L. N.; Fernandes, Elizabeth N.; da Silva, Leila M. S.; Marques, Edmar P.; Zhang, Jiujun; Marques, Aldalea L. Brandes
 CORPORATE SOURCE: Department of Technology Chemistry, Campus do Bacanga, Federal University of Maranhao, Sao Luis, MA, 65080-040, Brazil
 SOURCE: Journal of Power Sources (2005), 142(1-2), 10-17
 CODEN: JPSODZ; ISSN: 0378-7753
 PUBLISHER: Elsevier B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB A graphite electrode irreversibly adsorbed by 2,4,6-tris(2-pyridyl)-1,3,5-triazine (abbreviated as TPT) was examined by cyclic voltammetry. The adsorbed TPT exhibited two irreversible reduction waves in the potential range of -0.7 and -1.0 V (vs. SCE). Upon strong adsorption, TPT can serve as a coordination ligand for copper ions to form a surface complex. Its three adjacent nitrogen positions provide strong affinity to the metal ions and bond copper(II) to an electrode surface. A 1:1 coordination between Cu(II) or Cu(I) and the TPT ligand to form [Cu(II)(TPT)]²⁺ or [Cu(I)(TPT)]⁺ is the predominant process, evidenced by spectrophotometry, surface cyclic voltammetry, and coordinated structural feasibility of Cu(II)/Cu(I)-TPT complexes. The predominant copper(II)-TPT surface complex shows a reversible redox wave, which is identified as 1-electron process of [Cu(II)(TPT)]²⁺ ⇌ [Cu(I)(TPT)]⁺. The electrode adsorbed by [Cu(II)(TPT)]²⁺ complex showed electrocatalytic activity towards oxygen and/or hydrogen peroxide redns. The **catalyzed** reduction of oxygen and hydrogen peroxide were identified as four-electron and two-electron process to form water. Probably the possible electrocatalytic redns. were due to an inner-sphere mechanism, which involved a coordination between substrate (O₂ or H₂O₂) and [Cu(I)(TPT)]⁺. The reduction kinetics were also studied by a rotating disk electrode method.

IT 116868-55-4P
 (electrochem. reduction of oxygen and hydrogen peroxide
 catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-
 1,3,5-triazine complex adsorbed on graphite electrode)

RN 116868-55-4 HCAPLUS
 CN Copper(2+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

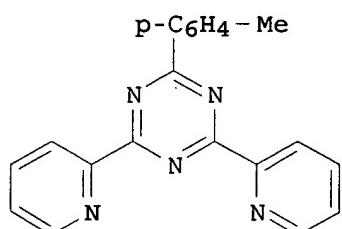
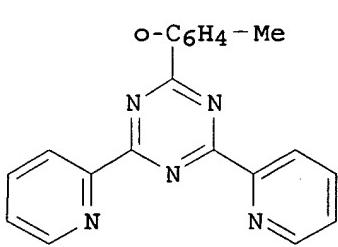
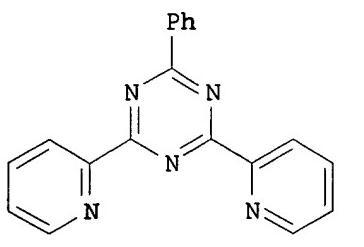


- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 72, 76
- IT Redox reaction
 Reduction, electrochemical
 Surface reaction **catalysts**
 (electrochem. reduction of oxygen and hydrogen peroxide
 catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-
 1,3,5-triazine complex adsorbed on graphite electrode)
- IT Reduction kinetics
 (electrochem.; electrochem. reduction of oxygen and hydrogen
 peroxide **catalyzed** by surface copper(II)-2,4,6-tris(2-
 pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode)
- IT Cyclic voltammetry
 (of TPT and TPT-Cu complexes adsorbed onto graphite electrodes;
 electrochem. reduction of oxygen and hydrogen peroxide
catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-
 1,3,5-triazine complex adsorbed on graphite electrode)
- IT Coordination compounds
 (reaction mechanism involving; electrochem. reduction of oxygen and
 hydrogen peroxide **catalyzed** by surface
 copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex
 adsorbed on graphite electrode)
- IT Electrodes
 (rotating disk electrodes; electrochem. reduction of oxygen and
 hydrogen peroxide **catalyzed** by surface
 copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex
 adsorbed on graphite electrode)
- IT 7722-84-1, Hydrogen peroxide, processes 7782-44-7, Oxygen,
 processes
 (electrochem. reduction of oxygen and hydrogen peroxide
catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-
 1,3,5-triazine complex adsorbed on graphite electrode)
- IT 64-19-7, Acetic acid, uses 7601-89-0, Sodium perchlorate
 7664-38-2, Phosphoric acid, uses 10043-35-3, Boric acid, uses
 (electrochem. reduction of oxygen and hydrogen peroxide)

- catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode)**
- IT 286832-00-6
 (electrochem. reduction of oxygen and hydrogen peroxide
catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode))
- IT 116868-55-4P
 (electrochem. reduction of oxygen and hydrogen peroxide
catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode))
- IT 1310-73-2, Sodium hydroxide, uses
 (electrochem. reduction of oxygen and hydrogen peroxide
catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode))
- IT 3682-35-7, 2,4,6-Tris(2-pyridyl)-1,3,5-triazine
 (electrochem. reduction of oxygen and hydrogen peroxide
catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode))
- IT 7782-42-5, Graphite, uses
 (electrochem. reduction of oxygen and hydrogen peroxide
catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode))
- IT 7758-98-7, Cupric sulfate, reactions
 (electrochem. reduction of oxygen and hydrogen peroxide
catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode))

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L16 ANSWER 7 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:693087 HCAPLUS
 DOCUMENT NUMBER: 141:359869
 TITLE: Ruthenium complexes of easily accessible tridentate ligands based on the 2-aryl-4,6-bis(2-pyridyl)-s-triazine motif: Absorption spectra, luminescence properties, and redox behavior
 AUTHOR(S): Polson, Matthew I. J.; Medlycott, Elaine A.; Hanan, Garry S.; Mikelsons, Larisa; Taylor, Nick J.; Watanabe, Masashi; Tanaka, Yasutaka; Loiseau, Frederique; Passalacqua, Rosalba; Campagna, Sebastiano
 CORPORATE SOURCE: Departement de Chimie, Universite de Montreal, Montreal, QC, H3T 1J4, Can.
 SOURCE: Chemistry--A European Journal (2004), 10(15), 3640-3648
 CODEN: CEUJED; ISSN: 0947-6539
 PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 141:359869
 GI



AB A family of tridentate ligands 1a-e (I-III), based on the 2-aryl-4,6-di(2-pyridyl)-s-triazine motif, was prepared along with their hetero- and homoleptic RuII complexes 2a-e ($[\text{Ru}(\text{tpy})(\text{1a-e})]^{2+}$; tpy = 2,2':6',2'''-terpyridine) and 3a-e ($[\text{Ru}(\text{1a-e})_2]^{2+}$), resp. The ligands and their complexes were characterized by ^1H NMR spectroscopy, ES-MS, and elemental anal. Single-crystal x-ray anal. of 2a and 2e demonstrated that the triazine core is nearly coplanar with the noncoordinating ring, with dihedral angles of 1.2 and 18.6°, resp. The redox behavior and electronic absorption and luminescence properties (both at room temperature in liquid MeCN and at 77 K in butyronitrile rigid matrix) were studied. Each species undergoes one oxidation process centered on the metal ion, and several (three for 2a-e and four for 3a-e) reduction processes centered on the ligand orbitals. All compds. exhibit intense absorption bands in the UV region, assigned to spin-allowed ligand-centered (LC) transitions, and moderately intense spin-allowed metal-to-ligand charge-transfer (MLCT) absorption bands in the visible region. The compds. exhibit relatively intense emissions, originating from triplet MLCT levels, both at 77 K and at room temperature. The incorporation of triazine rings and the near planarity of the noncoordinating ring increase the luminescence lifetimes of the complexes by lowering the energy of the 3MLCT state and creating a large energy gap to the dd state.

IT

21791-68-4	69666-63-3	69667-97-6
69730-33-2	774219-67-9	774219-68-0
774219-69-1	774219-70-4	774219-71-5
774219-72-6	774219-73-7	774219-74-8
774219-75-9	774219-76-0	774219-77-1
774219-78-2	774219-79-3	774219-80-6
774219-81-7	774219-82-8	774219-83-9
774219-84-0	774219-85-1	774219-86-2
774219-87-3	774219-88-4	774219-89-5
774219-90-8	774219-91-9	774219-92-0
774219-93-1	774219-94-2	774219-95-3

774219-96-4 774219-97-5 774219-98-6

774219-99-7 774220-00-7 774220-01-8

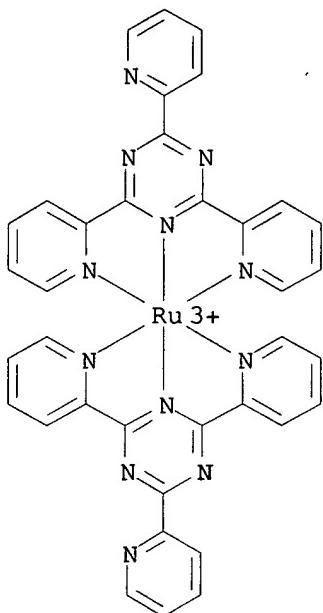
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774220-05-2 774220-06-3

(formation and redox potential of)

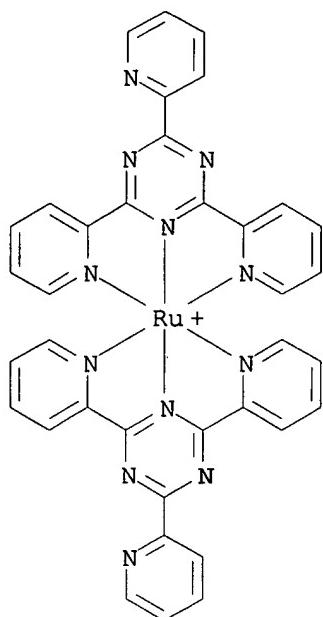
RN 21791-68-4 HCAPLUS

CN Ruthenium(3+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



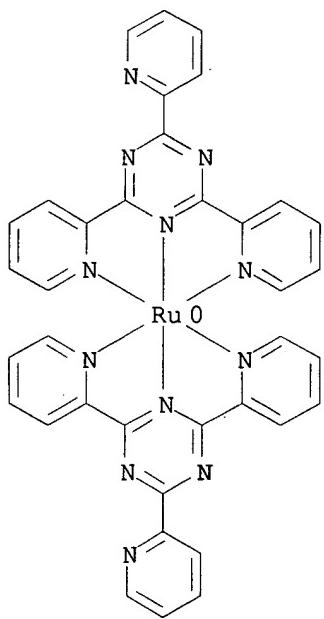
RN 69666-63-3 HCAPLUS

CN Ruthenium(1+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



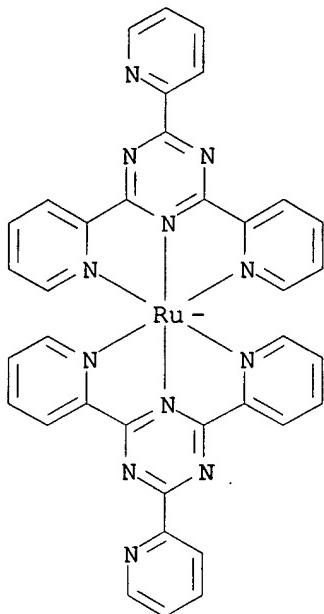
RN 69667-97-6 HCAPLUS

CN Ruthenium, bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



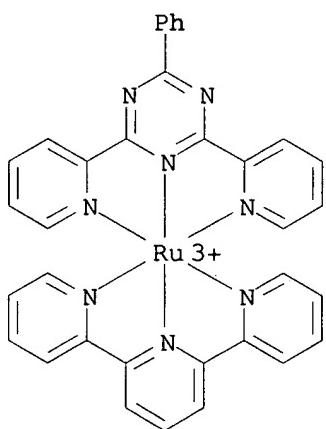
RN 69730-33-2 HCAPLUS

CN Ruthenate(1-), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



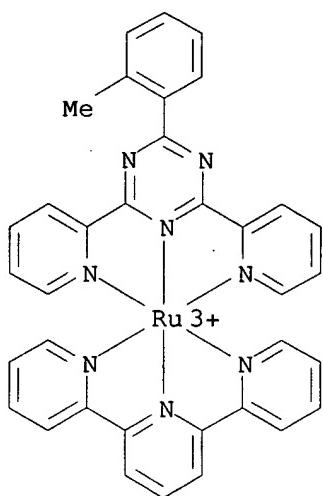
RN 774219-67-9 HCAPLUS

CN Ruthenium(3+), [2-phenyl-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N5](2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23) - (9CI) (CA INDEX NAME)



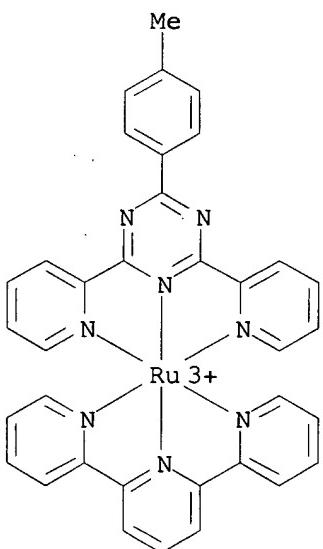
RN 774219-68-0 HCAPLUS

CN Ruthenium(3+), [2-(2-methylphenyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N5](2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23) - (9CI) (CA INDEX NAME)



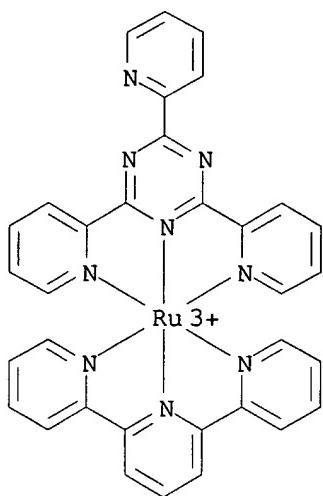
RN 774219-69-1 HCPLUS

CN Ruthenium(3+), [2-(4-methylphenyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N5](2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23) - (9CI) (CA INDEX NAME)



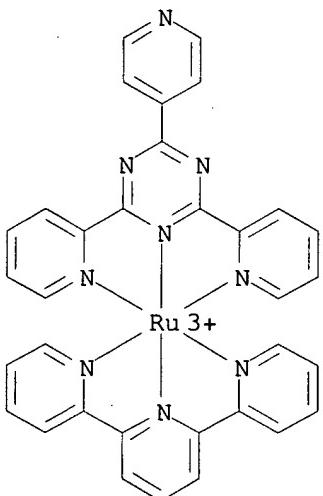
RN 774219-70-4 HCPLUS

CN Ruthenium(3+), [2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1](2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23) - (9CI) (CA INDEX NAME)



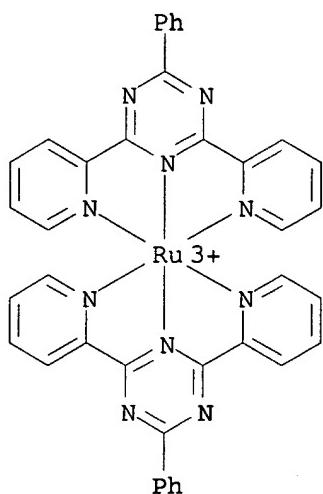
RN 774219-71-5 HCPLUS

CN Ruthenium(3+), [2,6-di(2-pyridinyl-κN)-4-(4-pyridinyl)-1,3,5-triazine-κN1](2,2':6',2''-terpyridine-κN1,κN1',κN1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



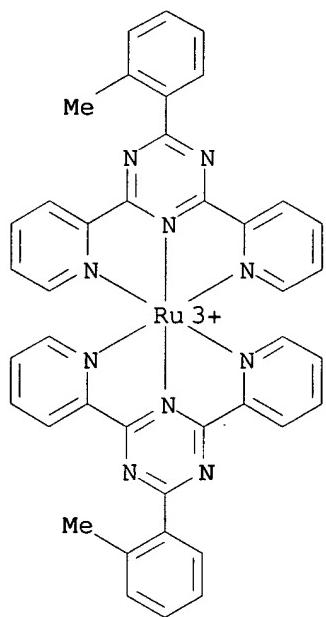
RN 774219-72-6 HCPLUS

CN Ruthenium(3+), bis[4-phenyl-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 774219-73-7 HCAPLUS

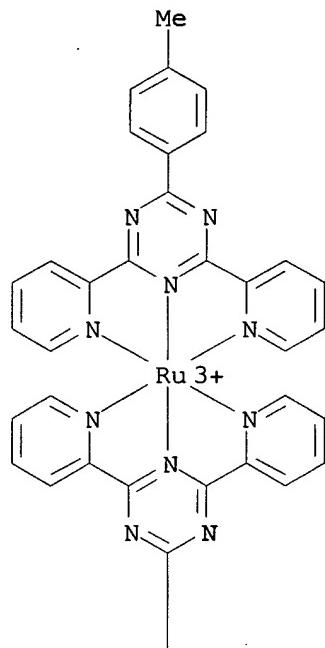
CN Ruthenium(3+), bis[4-(2-methylphenyl)-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



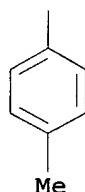
RN 774219-74-8 HCAPLUS

CN Ruthenium(3+), bis[4-(4-methylphenyl)-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

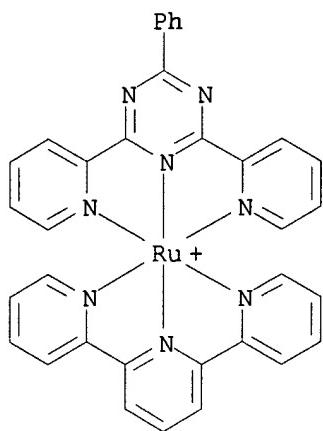
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PAGE 2-A

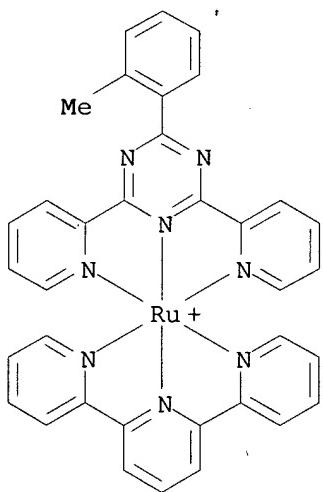


RN 774219-75-9 HCAPLUS
 CN Ruthenium(1+), [2-phenyl-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN5](2,2':6',2''-terpyridine-κN1,κN1',κN1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



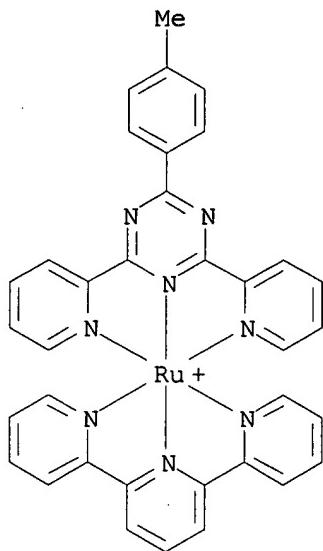
RN 774219-76-0 HCAPLUS

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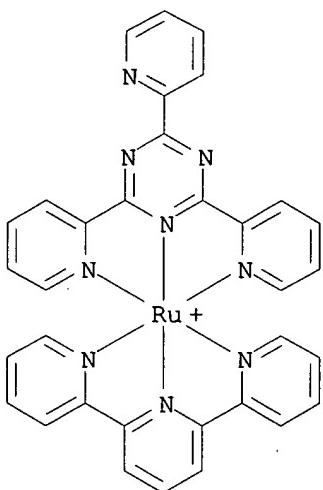
RN 774219-77-1 HCAPLUS

CN Ruthenium(1+), [2-(4-methylphenyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N5] (2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



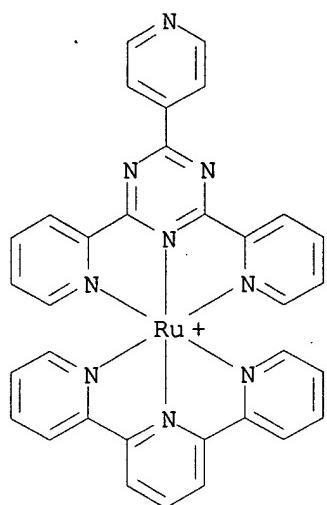
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CN Ruthenium(1+), [2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1](2,2':6',2''-terpyridine-κN1,κN1',κN1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



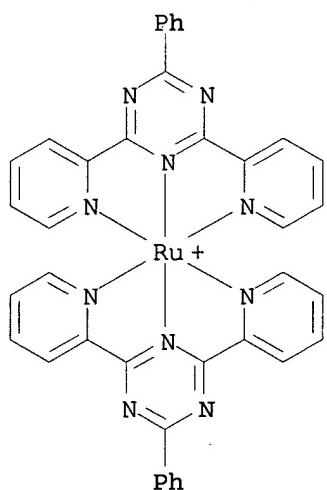
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CN Ruthenium(1+), [2,4-di(2-pyridinyl-κN)-6-(4-pyridinyl)-1,3,5-triazine-κN3](2,2':6',2''-terpyridine-κN1,κN1',κN1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



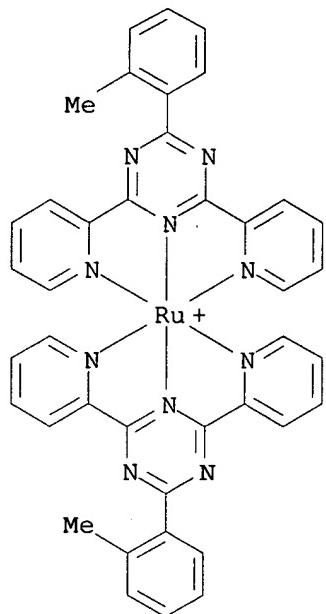
RN 774219-80-6 HCPLUS

CN Ruthenium(1+), bis[4-phenyl-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 774219-81-7 HCPLUS

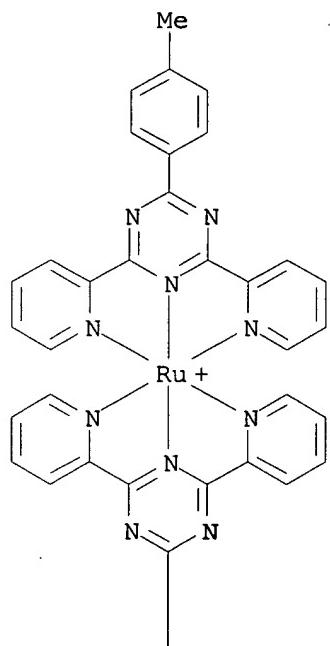
CN Ruthenium(1+), bis[4-(2-methylphenyl)-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



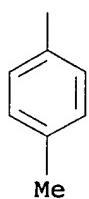
RN 774219-82-8 HCPLUS

CN Ruthenium(1+), bis[4-(4-methylphenyl)-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

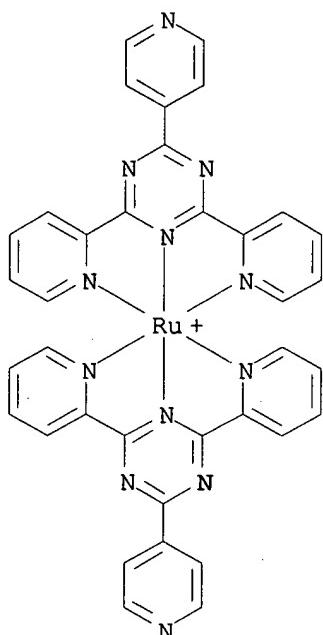
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PAGE 2-A

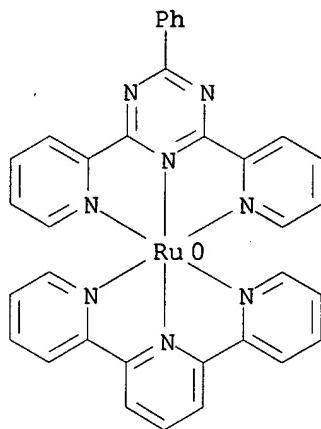


RN 774219-83-9 HCAPLUS

CN Ruthenium(1+), bis[2,6-di(2-pyridinyl- κ N)-4-(4-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

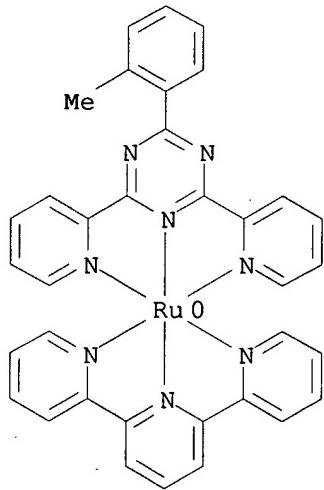
RN 774219-84-0 HCAPLUS

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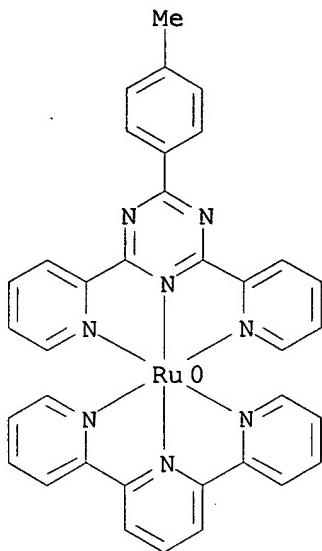
RN 774219-85-1 HCAPLUS

CN Ruthenium, [2-(2-methylphenyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN5](2,2':6',2''-terpyridine-κN1,κN1',κN1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



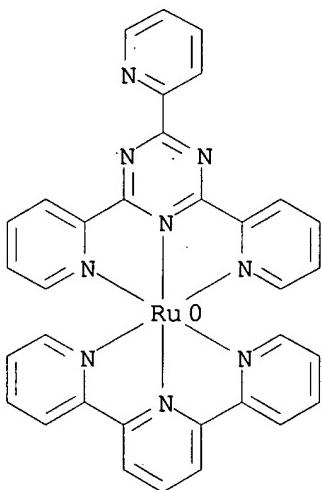
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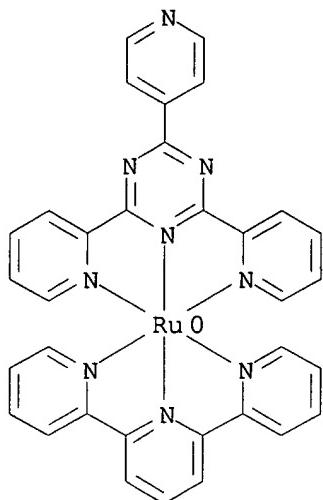
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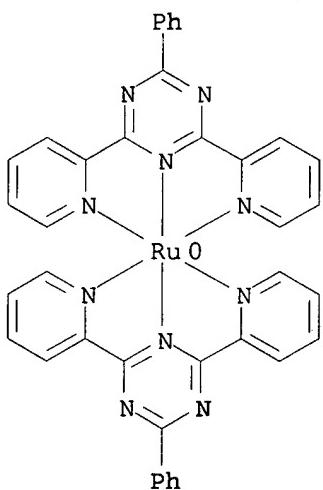
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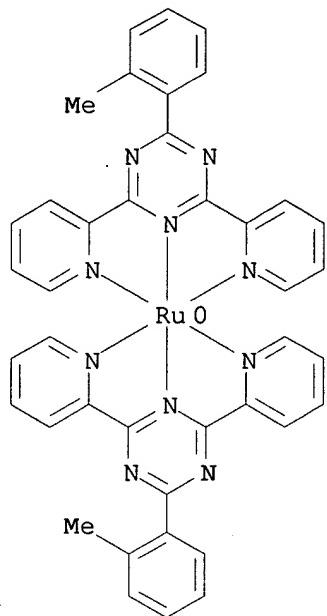
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CN Ruthenium, bis[4-phenyl-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 774219-90-8 HCPLUS

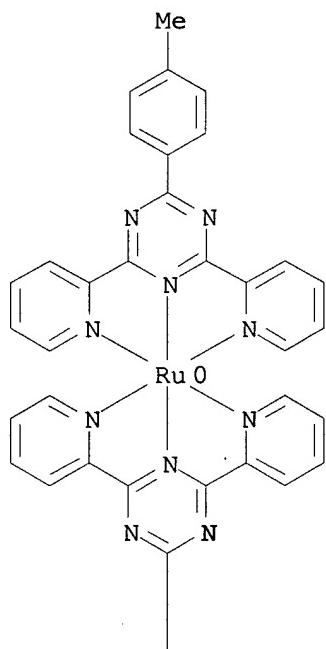
CN Ruthenium, bis[4-(2-methylphenyl)-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 774219-91-9 HCPLUS

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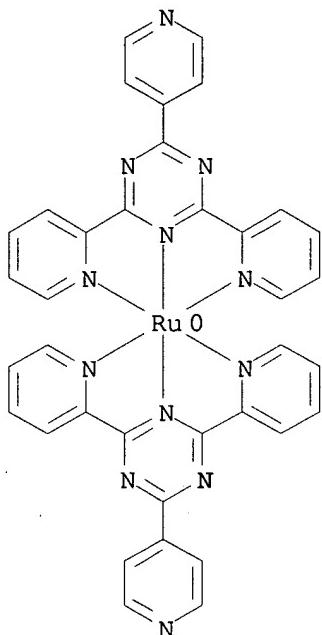
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PAGE 2-A

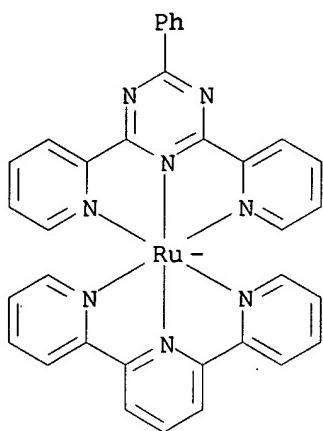


RN 774219-92-0 HCPLUS

CN Ruthenium, bis[2,6-di(2-pyridinyl- κ N)-4-(4-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

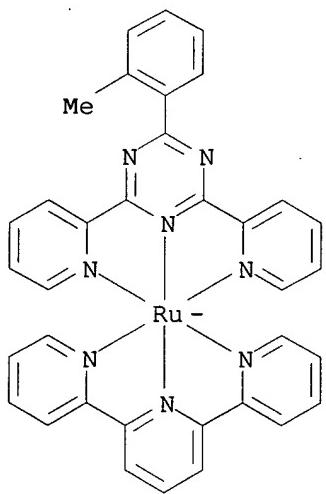
RN 774219-93-1 HCPLUS

CN Ruthenate(1-), [2-phenyl-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N5](2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



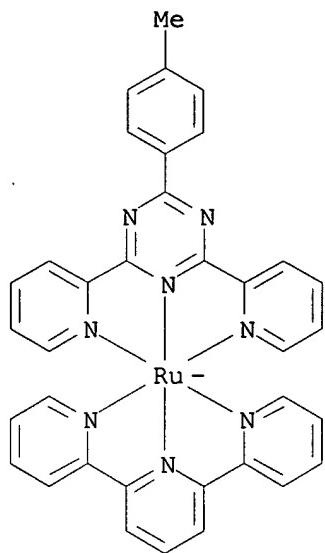
RN 774219-94-2 HCAPLUS

CN Ruthenate(1-), [2-(2-methylphenyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N5](2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



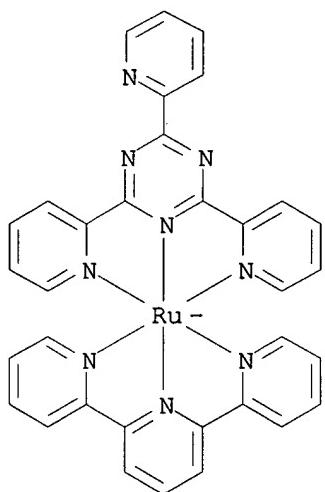
RN 774219-95-3 HCAPLUS

CN Ruthenate(1-), [2-(4-methylphenyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N5](2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



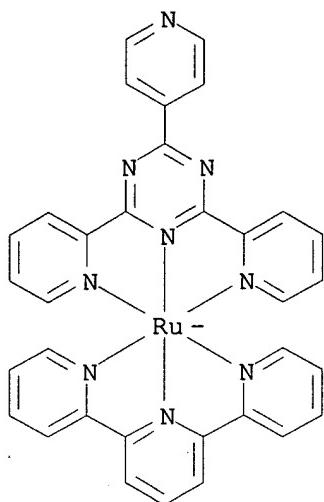
RN 774219-96-4 HCPLUS

CN Ruthenate(1-), [2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1](2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



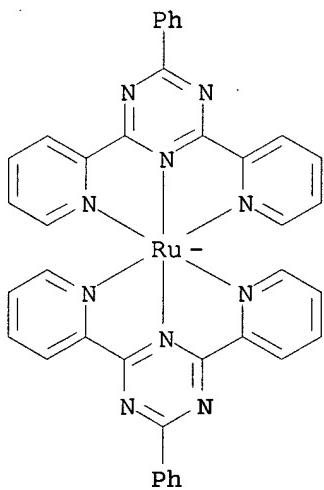
RN 774219-97-5 HCPLUS

CN Ruthenate(1-), [2,4-di(2-pyridinyl- κ N)-6-(4-pyridinyl)-1,3,5-triazine- κ N3](2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



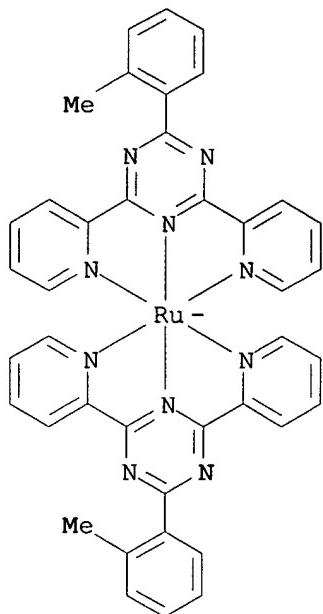
RN 774219-98-6 HCAPLUS

CN Ruthenate(1-), bis[4-phenyl-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 774219-99-7 HCAPLUS

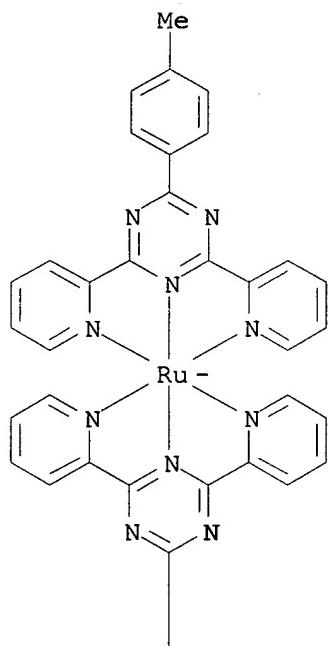
CN Ruthenate(1-), bis[4-(2-methylphenyl)-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 774220-00-7 HCPLUS

CN Ruthenate(1-), bis[4-(4-methylphenyl)-2,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

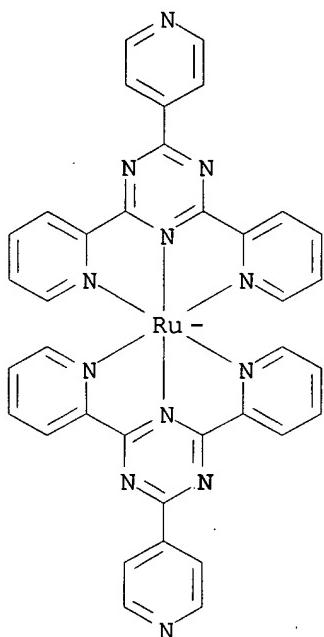
PAGE 1-A



PAGE 2-A

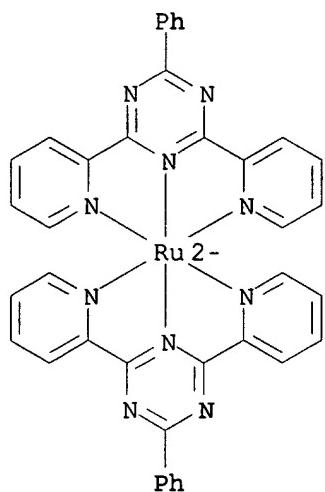


RN 774220-01-8 HCPLUS

CN Ruthenate(1-), bis[2,6-di(2-pyridinyl- κ N)-4-(4-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

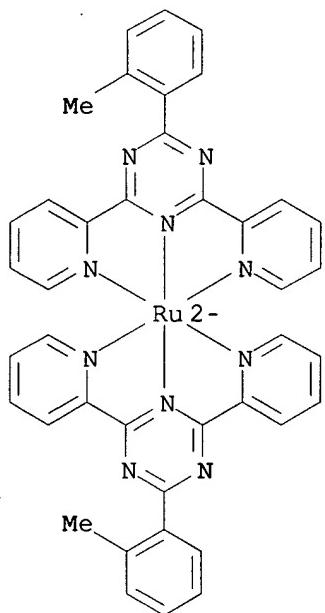
RN 774220-02-9 HCPLUS

CN Ruthenate(2-), bis[4-phenyl-2,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 774220-03-0 HCAPLUS

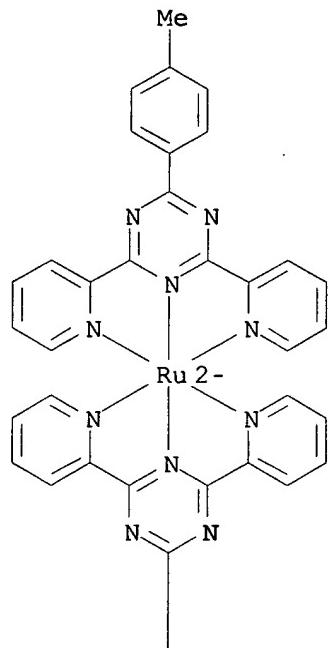
CN Ruthenate(2-), bis[4-(2-methylphenyl)-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



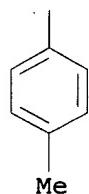
RN 774220-04-1 HCAPLUS

CN Ruthenate(2-), bis[4-(4-methylphenyl)-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

PAGE 1-A

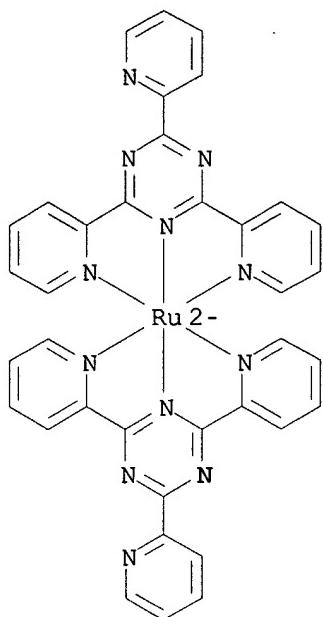


PAGE 2-A



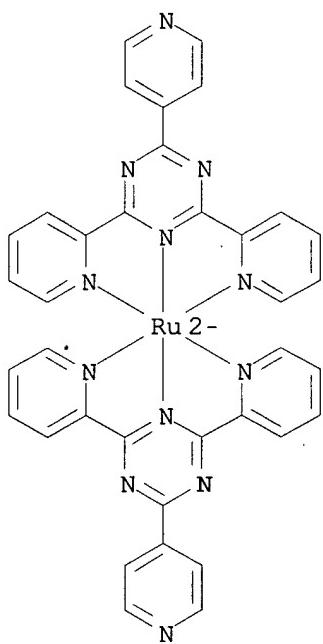
RN 774220-05-2 HCPLUS

CN Ruthenate(2-), bis[4-(2-pyridinyl)-2,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 774220-06-3 HCAPLUS

CN Ruthenate(2-), bis[2,6-di(2-pyridinyl- κ N)-4-(4-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



IT 461388-76-1P 774219-58-8P

(preparation, crystal structure, cyclic voltammetry, luminescence and UV-visible spectra of)

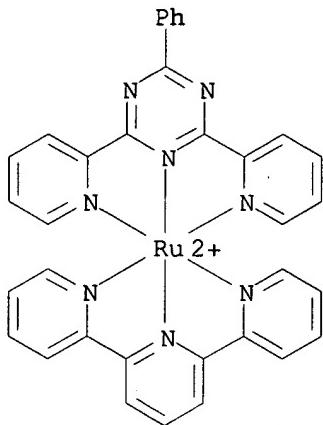
RN 461388-76-1 HCAPLUS

CN Ruthenium(2+), [2-phenyl-4,6-di(2-pyridinyl- κ N)-1,3,5-

triazine- κ N5] (2,2':6',2''-terpyridine-
 κ N1, κ N1', κ N1'')-, (OC-6-23)-,
bis [hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

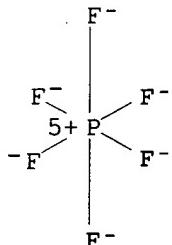
CM 1

CRN 461388-73-8
CMF C34 H24 N8 Ru
CCI CCS



CM 2

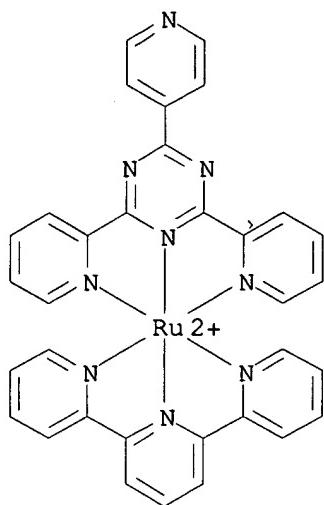
CRN 16919-18-9
CMF F6 P
CCI CCS



RN 774219-58-8 HCAPLUS
CN Ruthenium(2+), [2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1] (2,2':6',2''-terpyridine-
 κ N1, κ N1', κ N1'')-, (OC-6-23)-,
bis [hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

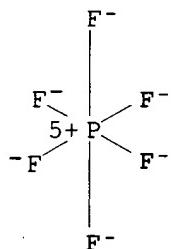
CM 1

CRN 461388-74-9
CMF C33 H23 N9 Ru
CCI CCS



CM 2

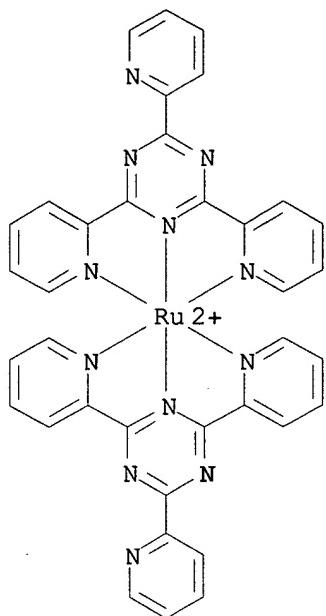
CRN 16919-18-9
 CMF F6 P
 CCI CCS



IT 75964-99-7P 774219-62-4P 774219-64-6P
 (preparation, cyclic voltammetry, and UV-visible spectrum of)
 RN 75964-99-7 HCPLUS
 CN Ruthenium(2+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-
 1,3,5-triazine-κN1]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-
)] (9CI) (CA INDEX NAME)

CM 1

CRN 61037-16-9
 CMF C36 H24 N12 Ru
 CCI CCS

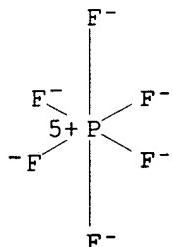


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 774219-62-4 HCPLUS

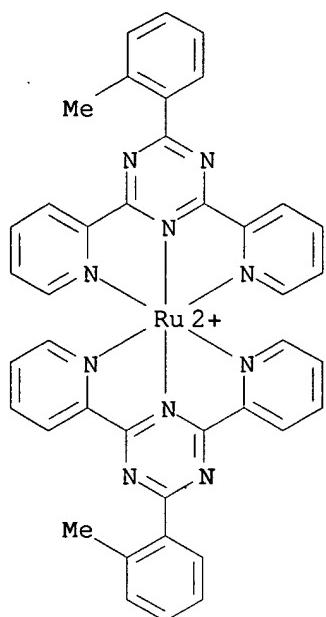
CN Ruthenium(2+), bis[2-(2-methylphenyl)-4,6-di(2-pyridyl- κ N)-1,3,5-triazine- κ N5]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 774219-61-3

CMF C40 H30 N10 Ru

CCI CCS

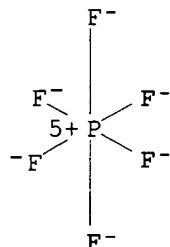


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 774219-64-6 HCPLUS

CN Ruthenium(2+), bis[2-(4-methylphenyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN5]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

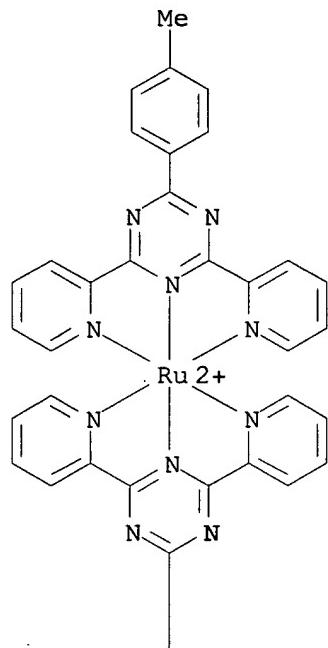
CM 1

CRN 774219-63-5

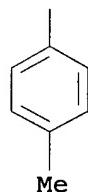
CMF C40 H30 N10 Ru

CCI CCS

PAGE 1-A

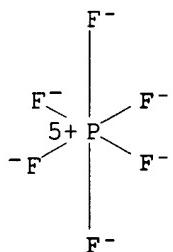


PAGE 2-A



CM 2

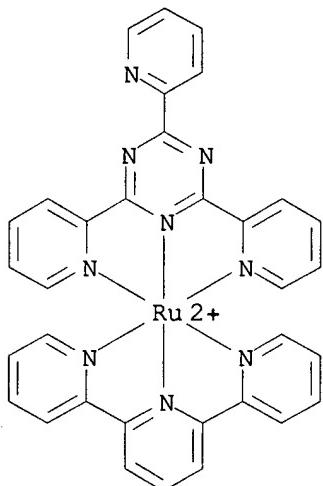
CRN 16919-18-9
 CMF F6 P
 CCI CCS



IT 134388-06-0P 774219-55-5P 774219-57-7P
 774219-60-2P 774219-66-8P
 (preparation, cyclic voltammetry, luminescence and UV-visible
 spectra of)
 RN 134388-06-0 HCAPLUS
 CN Ruthenium(2+), (2,2':6',2''-terpyridine-
 κN1,κN1',κN1'') (2,4,6-tri-2-pyridinyl-1,3,5-
 triazine-κN1,κN2,κN6)-, (OC-6-23)-,
 bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

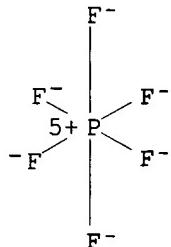
CM 1

CRN 134388-05-9
 CMF C33 H23 N9 Ru
 CCI CCS



CM 2

CRN 16919-18-9
 CMF F6 P
 CCI CCS

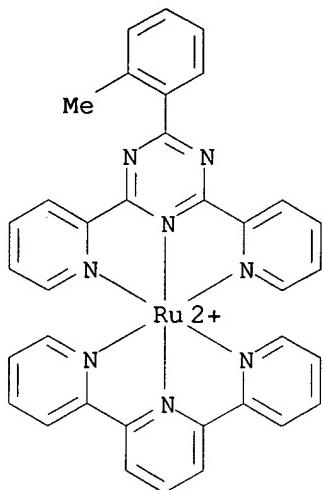


RN 774219-55-5 HCAPLUS
 CN Ruthenium(2+), [2-(2-methylphenyl)-4,6-di(2-pyridinyl-κN)-
 1,3,5-triazine-κN5] (2,2':6',2''-terpyridine-
 κN1,κN1',κN1'')-, (OC-6-23)-,

bis [hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

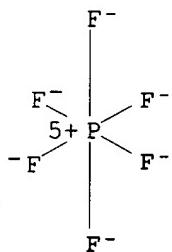
CM 1

CRN 774219-54-4
CMF C35 H26 N8 Ru
CCI CCS



CM 2

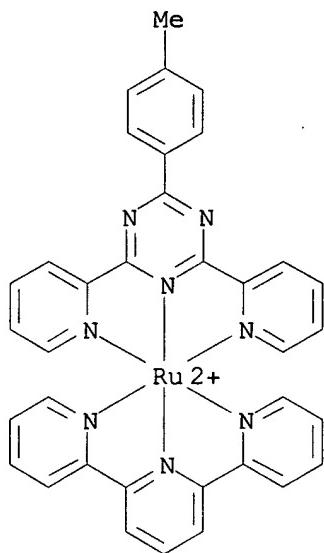
CRN 16919-18-9
CMF F6 P
CCI CCS



RN 774219-57-7 HCAPLUS
CN Ruthenium(2+), [2-(4-methylphenyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN5](2,2':6',2''-terpyridine-κN1,κN1',κN1'')-, (OC-6-23)-, bis [hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 774219-56-6
CMF C35 H26 N8 Ru
CCI CCS

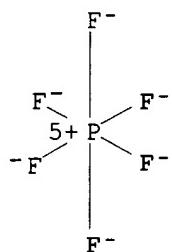


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 774219-60-2 HCPLUS

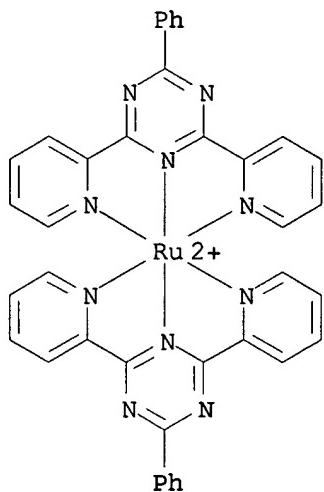
CN Ruthenium(2+), bis[2-phenyl-4,6-di(2-pyridyl-<math>\kappa</math>N)-1,3,5-triazine-<math>\kappa</math>N5]-, (OC-6-1'2)-, bis [hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 774219-59-9

CMF C38 H26 N10 Ru

CCI CCS

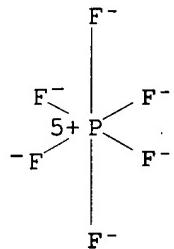


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 774219-66-8 HCAPLUS

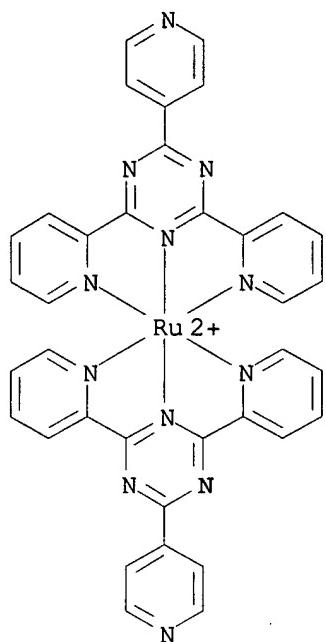
CN Ruthenium(2+), bis[2,6-di(2-pyridinyl-κN)-4-(4-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 774219-65-7

CMF C36 H24 N12 Ru

CCI CCS

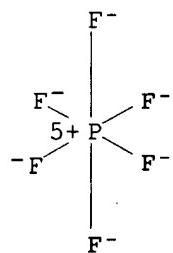


CM 2

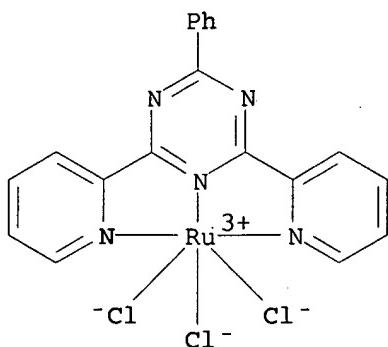
CRN 16919-18-9

CMF F6 P

CCI CCS



IT 873216-50-3P
 (preparation, cyclic voltammetry, luminescence and UV-visible
 spectra of)
 RN 873216-50-3 HCPLUS
 CN INDEX NAME NOT YET ASSIGNED



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 72, 73, 75

IT 21791-68-4 69666-63-3 69667-97-6
69730-33-2 774219-67-9 774219-68-0
774219-69-1 774219-70-4 774219-71-5
774219-72-6 774219-73-7 774219-74-8
774219-75-9 774219-76-0 774219-77-1
774219-78-2 774219-79-3 774219-80-6
774219-81-7 774219-82-8 774219-83-9
774219-84-0 774219-85-1 774219-86-2
774219-87-3 774219-88-4 774219-89-5
774219-90-8 774219-91-9 774219-92-0
774219-93-1 774219-94-2 774219-95-3
774219-96-4 774219-97-5 774219-98-6
774219-99-7 774220-00-7 774220-01-8
774220-02-9 774220-03-0 774220-04-1
774220-05-2 774220-06-3

(formation and redox potential of)

IT 461388-76-1P 774219-58-8P
(preparation, crystal structure, cyclic voltammetry, luminescence and UV-visible spectra of)
IT 75964-99-7P 774219-62-4P 774219-64-6P
(preparation, cyclic voltammetry, and UV-visible spectrum of)
IT 134388-06-0P 774219-55-5P 774219-57-7P
774219-60-2P 774219-66-8P
(preparation, cyclic voltammetry, luminescence and UV-visible spectra of)
IT 873216-50-3P
(preparation, cyclic voltammetry, luminescence and UV-visible spectra of)

REFERENCE COUNT: 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 8 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:443925 HCAPLUS

DOCUMENT NUMBER: 141:166707

TITLE: Potential inhibitors of DNA topoisomerase II: ruthenium(II) poly-pyridyl and pyridyl-azine complexes

AUTHOR(S): Chandra, Manish; Sahay, A. N.; Pandey, D. S.; Tripathi, R. P.; Saxena, J. K.; Reddy, V. J. M.; Puerta, M. Carmen; Valerga, Pedro

CORPORATE SOURCE: Department of Chemistry, Awadhesh Pratap Singh University, Rewa, 486 003, India

SOURCE: Journal of Organometallic Chemistry (2004),
 689(13), 2256-2267
 CODEN: JORCAI; ISSN: 0022-328X
 PUBLISHER: Elsevier Science B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 141:166707

AB In search of new DNA probes new mono and binuclear cationic complexes $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{L})]^+$ and $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(-\mu-\text{L})\text{RuH}(\text{CO})(\text{PPh}_3)_2]^{2+}$ [L = pyridine-2-carbaldehyde azine (paa), p-phenylene-bis(picoline)aldimine (pbp) and p-biphenylene-bis(picoline)aldimine (bbp)] were synthesized. The reaction products were characterized by microanalyses, spectral (IR, UV-visible, NMR and ESMS and FAB-MS) and electrochem. studies. Structure of the representative mononuclear complex $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{paa})]\text{BF}_4^-$ was crystallog. determined. The crystal packing in $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{paa})]\text{BF}_4^-$ is stabilized by intermol. $\pi-\pi$ stacking resulting into a spiral network. Topoisomerase II inhibitory activity of the complexes and a few other related complexes $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{L})]^+$ (L = 2,4,6-tris(2-pyridyl)-1,3,5-triazine (tptz) and 2,3-bis(2-pyridyl)-pyrazine (bppz)) were examined against filarial parasite *Setaria cervi*. Absorption titration expts. provided good support for DNA interaction and binding consts. also were calculated which were found in the range $1.2 + 103-4.01 + 104 \text{ M}^{-1}$.

IT 442848-09-1
 (effect on DNA Topoisomerase II activity of *s. cervi*)

RN 442848-09-1 HCPLUS

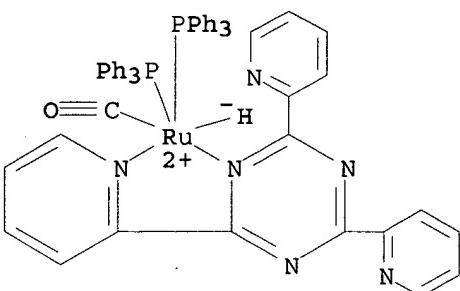
CN Ruthenium(1+), carbonylhydro[2-(2-pyridinyl- κ N)-4,6-di-2-pyridinyl-1,3,5-triazine- κ N1]bis(triphenylphosphine)-, (OC-6-15)-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 442848-08-0

CMF C55 H43 N6 O P2 Ru

CCI CCS

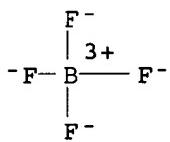


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 10, 68, 72, 75
 IT 442848-09-1 442848-12-6 442848-14-8
 (effect on DNA Topoisomerase II activity of s. cervi)
 REFERENCE COUNT: 82 THERE ARE 82 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L16 ANSWER 9 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:392560 HCAPLUS
 DOCUMENT NUMBER: 140:408669
 TITLE: Use of metal complex compounds as
 oxidation catalysts
 INVENTOR(S): Schlingloff, Gunther; Wiprecht, Torsten;
 Heinz, Uwe; Schneider, Albert; Dubs,
 Marie-Josée; Bachmann, Frank; Hazenkamp,
 Menno; Ehli, Thomas; Vincenzi, Cornelia;
 Dannacher, Josef
 PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.;
 et al.
 SOURCE: PCT Int. Appl., 94 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2004039934	A1	20040513	WO 2003-EP11636	2003 1021

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,
 CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES,
 FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
 KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,
 MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO,
 RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ,
 UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
 DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL,
 PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN,
 GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003278117	A1	20040525	AU 2003-278117	2003 1021
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EP 1556467	A1	20050727	EP 2003-769428	2003 1021
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,
 MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ,

EE, HU, SK				
BR 2003015869	A	20050927	BR 2003-15869	
				2003
				1021
JP 2006504517	T2	20060209	JP 2004-547539	
				2003
				1021
US 2006052265	A1	20060309	US 2005-531906	
				2005
				0418
PRIORITY APPLN. INFO.:			EP 2002-405929	A
				2002
				1030
			WO 2003-EP11636	W
				2003
				1021

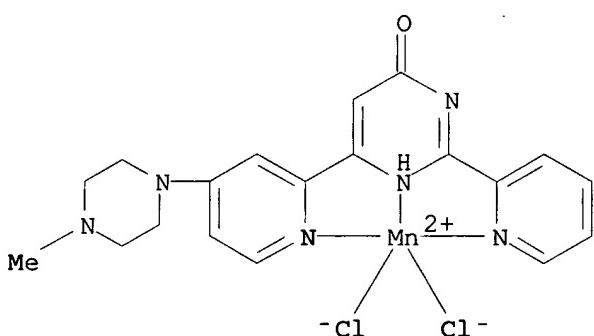
OTHER SOURCE(S): MARPAT 140:408669

AB The invention relates to the use of metal complex compds. of formula [LnMemX_p]zY_q [X = coordinating or bridging radical; n, m = 1-8; p = 0-32; z = charge of metal complex; Me = metals; Y = counter ions; q = z/(charge of Y); L = specified ligands] as catalysts for oxidation reactions particularly by peroxides such as in textile bleaching without damaging fibers and dyeings, and also novel metal complex compds. and novel ligands.

IT 860469-44-9P 860469-45-0P
(manufacture and use of metal complex compds. as oxidation catalysts)

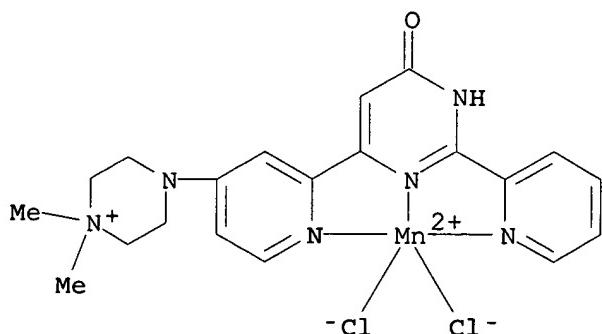
RN 860469-44-9 HCPLUS

CN Manganese, dichloro[6-[4-(4-methyl-1-piperazinyl)-2-pyridinyl-κN]-2-(2-pyridinyl-κN)-4(1H)-pyrimidinone-κN1]-
(9CI) (CA INDEX NAME)



RN 860469-45-0 HCPLUS

CN Manganese(1+), dichloro[4-[2-[1,6-dihydro-6-oxo-2-(2-pyridinyl-κN)-4-pyrimidinyl-κN3]-4-pyridinyl-κN]-1,1-dimethylpiperazinium] -, iodide (9CI) (CA INDEX NAME)



● I -

- IC ICM C11D003-395
ICS C11D003-16; C07D401-14; C11D003-39
CC 46-5 (Surface Active Agents and Detergents)
Section cross-reference(s): 40, 43, 78
ST oxidn catalyst metal complex
IT Textiles
(cotton; manufacture and use of metal complex compds. as oxidation catalysts)
IT Bleaching
Oxidation catalysts
Pulp bleaching
Textiles
(manufacture and use of metal complex compds. as oxidation catalysts)
IT 7722-84-1, Hydrogen peroxide, uses 7782-44-7, Oxygen, uses
(bleaching agent; manufacture and use of metal complex compds. as oxidation catalysts)
IT 688753-55-1P
(ligands; manufacture and use of metal complex compds. as oxidation catalysts)
IT 860469-44-9P 860469-45-0P
(manufacture and use of metal complex compds. as oxidation catalysts)
IT 19235-89-3P, 4-Chloro-2-cyanopyridine 64064-56-8P,
4-Chloropyridine-2-carboxylic acid ethyl ester 75239-97-3P
99586-65-9P 688753-53-9P 688753-54-0P 688753-56-2P
688753-57-3P 688753-58-4P 688753-59-5P 688753-60-8P
688753-61-9P 688753-62-0P
(manufacture and use of metal complex compds. as oxidation catalysts)
IT 50-01-1, Guanidine hydrochloride 57-13-6, Urea, reactions
64-17-5, Ethanol, reactions 98-98-6, Picolinic acid 100-70-9,
2-Cyanopyridine 109-01-3, 1-Methylpiperazine 141-78-6, Ethyl acetate, reactions 1336-21-6, Ammonium hydroxide 10239-68-6
12125-02-9, Ammonium chloride, reactions 51285-26-8,
2-Amidinopyridine hydrochloride
(manufacture and use of metal complex compds. as oxidation catalysts)
IT 7646-69-7, Sodium hydride 7719-09-7, Thionyl chloride
(manufacture and use of metal complex compds. as oxidation catalysts)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 10 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2003:551674 HCAPLUS
 DOCUMENT NUMBER: 139:114098
 TITLE: Method and reagent for colorimetry using transition metal complex and oxidoreductase
 INVENTOR(S): Nagakawa, Kenji; Tsujimoto, Tomomichi; Nishino, Susumu; Teramoto, Masaaki; Kawase, Yoshiyuki
 PATENT ASSIGNEE(S): Arkray, Inc., Japan
 SOURCE: PCT Int. Appl., 58 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003057905	A1	20030717	WO 2003-JP27	2003 0106
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2448128	AA	20030628	CA 2003-2448128	2003 0106
AU 2003201901	A1	20030724	AU 2003-201901	2003 0106
CN 1522302	A	20040818	CN 2003-800604	2003 0106
EP 1457572	A1	20040915	EP 2003-700461	2003 0106
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
NZ 529279	A	20051223	NZ 2003-529279	2003 0106
ZA 2003008519	A	20041104	ZA 2003-8519	2003 1031
US 2004142406	A1	20040722	US 2003-476298	

PRIORITY APPLN. INFO.:

JP 2001-400380

A

2003

1211

2001

1228

WO 2003-JP27

W

2003

0106

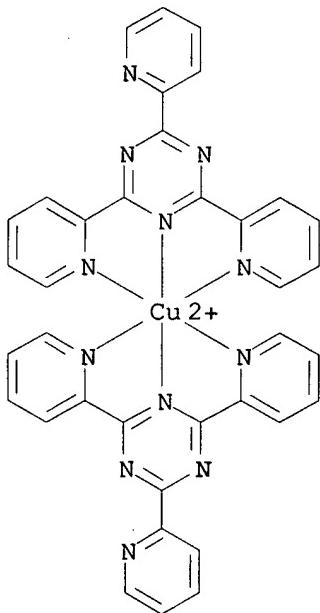
AB A method for colorimetry of an analyte (e.g., glucose, cholesterol, uric acid, pyruvic acid, lactic acid) is provided, with which reliable analyses are easily performed in a short time. The analyte is qual. or quant. determined by transferring electrons via a mediator with an oxidoreductase from the analyte to a color forming agent capable of forming a color by reduction, and measuring the color developed from the color forming agent. Since the enzymic reaction of this colorimetry is an one-step reaction and the coloring reaction is generated via an mediator, measurements are performed within a short time. The measurement values are highly reliable because this reaction needs neither hydrogen peroxide nor oxygen. Also provided is a reagent used in this method.

IT 116868-55-4P 321358-74-1P

(method and reagent for colorimetry using transition metal complex and oxidoreductase)

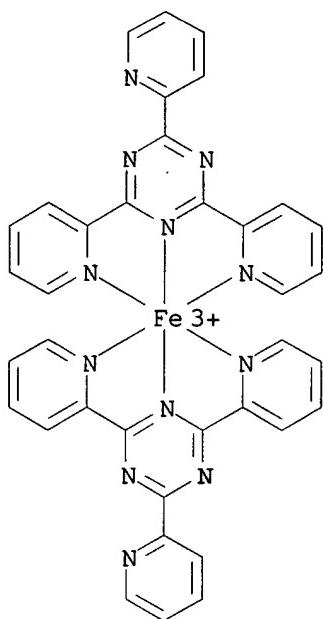
RN 116868-55-4 HCAPLUS

CN Copper(2+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 321358-74-1 HCAPLUS

CN Iron(3+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

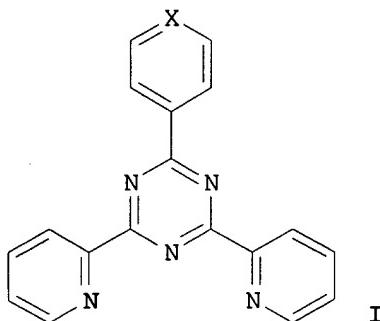


IC ICM C12Q001-32
 ICS G01N021-78; G01N031-22; G01N033-52
 CC 9-5 (Biochemical Methods)
 IT Blood analysis
 Color formers
 Colorimetry
 Electron transfer catalysts
 UV and visible spectroscopy
 (method and reagent for colorimetry using transition metal complex and oxidoreductase)
 IT 131-91-9DP, Fe^{3+} complexes 2066-93-5DP, Fe^{3+} complexes
 13479-49-7P 14971-82-5P 15823-71-9P 18661-69-3P
 29676-71-9DP, Fe^{3+} complexes 53204-05-0P 73562-37-5P
 80459-15-0DP, Fe^{3+} complexes 80459-17-2DP, Fe^{3+} complexes
116868-55-4P 128653-82-7P 139542-74-8DP, Fe^{3+}
 complexes 144975-47-3P 144975-48-4P 205445-01-8P
321358-74-1P 554429-11-7P 562864-75-9P 562864-76-0P
 562864-77-1P 562864-79-3P 562867-30-5P 562868-04-6P
 562868-06-8P
 (method and reagent for colorimetry using transition metal complex and oxidoreductase)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 11 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2002:460743 HCPLUS
 DOCUMENT NUMBER: 137:256806
 TITLE: Facile syntheses of tridentate ligands for room-temperature luminescence in ruthenium complexes
 AUTHOR(S): Polson, Matthew I. J.; Taylor, Nicholas J.; Hanan, Garry S.
 CORPORATE SOURCE: Department of Chemistry, University of Waterloo, Waterloo, Can.
 SOURCE: Chemical Communications (Cambridge, United

PUBLISHER: CODEN: CHECIR, ISSN:
DOCUMENT TYPE: Royal Society of Ch
LANGUAGE: Journal
OTHER SOURCE(S) : English
GI CASREACT 137:256806



AB A new family of easily prepared and functionalized terpyridine-like ligands exhibit room-temperature luminescence as their Ru(II) complexes. Results of the luminescence, UV-visible and cyclic voltammetric studies of Ru(tpy)(L) (*tpy* = terpyridine, L = I, X = CH, N, N+-Me) are reported.

IT 461388-77-2P
(preparation and crystal structure)

RN 461388-77-2 HCAPLUS

CN Ruthenium(2+), [2-phenyl-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N5](2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23)-, bis[hexafluorophosphate(1-)], compd. with acetonitrile
(CA INDEX NAME)

CM 1

CRN 75-05-8
CMF C2 H3 N

$$\text{H}_3\text{C}-\text{C}\equiv\text{N}$$

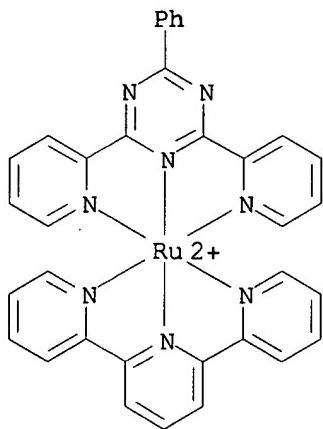
CM 2

CRN 461388-76-1

CMF C34 H24 N8 Ru . 2 F6 P

CM 3

CRN 461388-73-8
CMF C34 H24 N8 Ru
CCI CCS

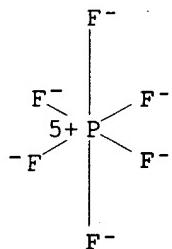


CM 4

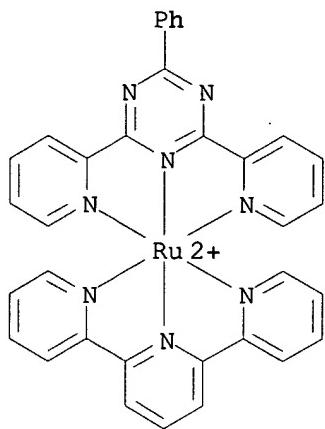
CRN 16919-18-9

CMF F6 P

CCI CCS

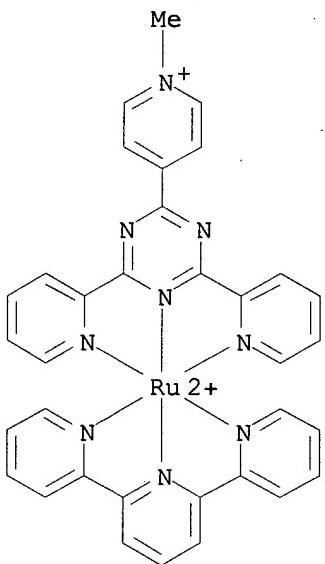


IT 461388-73-8P 461388-75-0P
 (preparation, cyclic voltammetry and luminescence)
 RN 461388-73-8 HCAPLUS
 CN Ruthenium(2+), [2-phenyl-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N5](2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23)- (9CI) (CA INDEX
 NAME)



RN 461388-75-0 HCAPLUS

CN Ruthenium(3+), [4-[4,6-di(2-pyridinyl-κN)-1,3,5-triazin-2-yl-κN5]-1-methylpyridinium] (2,2':6',2''-terpyridine-κN1,κN1',κN1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)

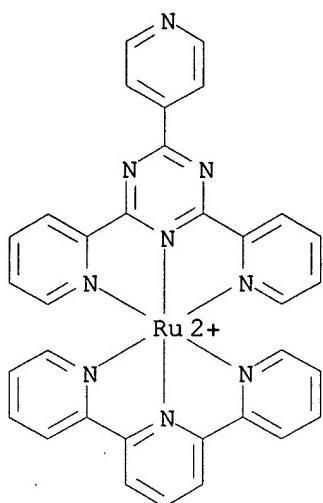


IT 461388-74-9P

(preparation, pyridyl methylation, cyclic voltammetry and luminescence)

RN 461388-74-9 HCAPLUS

CN Ruthenium(2+), [2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1] (2,2':6',2''-terpyridine-κN1,κN1',κN1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 28, 72, 73, 75

IT Luminescence
Oxidation, electrochemical
Redox potential
Reduction, electrochemical
(of ruthenium pyridyltriazine terpyridine complexes)
IT 461388-77-2P
(preparation and crystal structure)
IT 461388-73-8P 461388-75-0P
(preparation, cyclic voltammetry and luminescence)
IT 461388-74-9P
(preparation, pyridyl methylation, cyclic voltammetry and luminescence)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 12 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:175825 HCPLUS

DOCUMENT NUMBER: 137:118494

TITLE: Synthetic, spectral and structural aspects of some mono- and binuclear (homo/hetero) Ru(II) hydrido carbonyl complexes

AUTHOR(S): Chandra, Manish; Sahay, Abhaya Nand; Pandey, Daya Shankar; Puerta, M. Carmen; Valerga, Pedro.

CORPORATE SOURCE: Department of Chemistry, Awadhesh Pratap Singh University, Rewa, M.P., 486 003, India

SOURCE: Journal of Organometallic Chemistry (2002), 648(1-2), 39-48

CODEN: JORCAI; ISSN: 0022-328X
PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 137:118494

AB Reactions of the poly-pyridyl bridging ligand 2,4,6-tris(2-pyridyl)-1,3,5-triazine; 2,3-bis(2-pyridyl)pyrazine and 3,6-bis(2-pyridyl)-1,2,4,5-tetrazine (referred hereafter as tptz,

bppz and bptz, resp.) with $[\text{RuH}(\text{CO})\text{Cl}(\text{PPh}_3)_3]$ in methanol, gave highly stable cationic complexes $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{L})]^+$. Further, mononuclear $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{bppz})]\text{PF}_6$ reacted with K_2PtCl_4 , $[\text{PdCl}_2(\text{benzonitrile})_2]$, $[\{\text{Ru}(\eta^6-\text{C}_10\text{H}_{14})(\mu-\text{Cl})\text{Cl}\}_2]$, $[\{\text{Ru}(\eta^6-\text{C}_6\text{Me}_6)(\mu-\text{Cl})\text{Cl}\}_2]$, $[\text{RuCl}(\eta^5-\text{C}_5\text{H}_5)(\text{PPh}_3)_2]$ and $[\{\text{Rh}(\eta^5-\text{C}_5\text{Me}_5)(\mu-\text{Cl})\text{Cl}\}_2]$ in methanol under refluxing conditions to give bppz bridged binuclear complexes $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{bppz})\text{PtCl}_2]\text{PF}_6$, $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{bppz})(\eta^6-\text{C}_10\text{H}_{14})\text{RuCl}](\text{PF}_6)_2$, $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{bppz})(\eta^6-\text{C}_6\text{Me}_6)\text{Cl}_2\text{Ru}](\text{PF}_6)_2$, $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{bppz})(\eta^5-\text{C}_5\text{H}_5)(\text{PPh}_3)\text{Ru}](\text{PF}_6)_2$ and $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{bppz})\text{Rh}(\eta^5-\text{C}_5\text{Me}_5)\text{Cl}](\text{PF}_6)_2$ in quant. yield. The reaction products were characterized by elemental analyses, IR, ^1H -, $^1\text{H}-^1\text{H}$ -COSY, ^{13}C -, ^{31}P -NMR, ESMS, FAB mass spectroscopy, electronic spectra and cyclic voltammetry. The mol. structure of the representative mononuclear complex $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{tptz})]\text{BF}_4$ was confirmed by x-ray crystallog. Crystal structure determination revealed η^2 -coordination of the ligand tptz with the metal center. Crystal data: monoclinic, space group $\text{P}21/n$, a 17.810(6), b 22.233(9), c 12.156(4) Å, β 90.06(3)°, $Z = 4$, $R = 0.078$.

IT 442848-09-1P
(preparation, crystal structure and electrochem. oxidation and reduction)

RN 442848-09-1 HCAPLUS

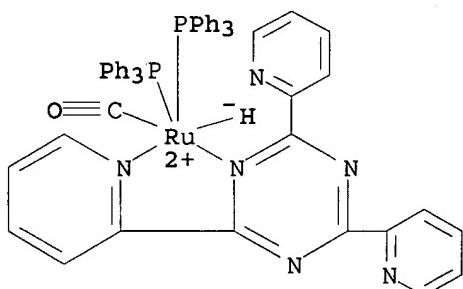
CN Ruthenium(1+), carbonylhydro[2-(2-pyridinyl- κ N)-4,6-di-2-pyridinyl-1,3,5-triazine- κ N1]bis(triphenylphosphine)-, (OC-6-15)-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 442848-08-0

CMF C55 H43 N6 O P2 Ru

CCI CCS

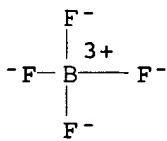


CM 2

CRN 14874-70-5

CMF B F4

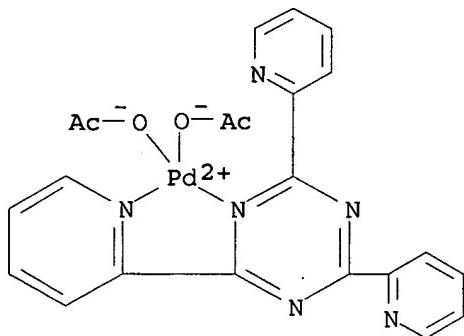
CCI CCS



CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 29, 72, 75
 IT Oxidation, electrochemical
 Oxidation potential
 Reduction, electrochemical
 Reduction potential
 (of ruthenium carbonyl hydrido phosphine tris(pyridyl)triazine,
 bis(pyridyl)pyrazine and bis(pyridyl)tetrazine complexes)
 IT 442848-12-6P 442848-17-1P 442848-29-5P
 (preparation and electrochem. oxidation and reduction)
 IT 442848-09-1P
 (preparation, crystal structure and electrochem. oxidation
 and reduction)
 REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L16 ANSWER 13 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2000:168930 HCPLUS
 DOCUMENT NUMBER: 132:224425
 TITLE: Production of hydrogen peroxide from oxygen
 and alcohols, catalyzed by palladium
 complexes
 AUTHOR(S): Bortolo, R.; Bianchi, D.; D'Aloisio, R.;
 Querci, C.; Ricci, M.
 CORPORATE SOURCE: EniChem, Centro Ricerche Novara 'Istituto G.
 Donegani', Novara, I-28100, Italy
 SOURCE: Journal of Molecular Catalysis A: Chemical
 (2000), 153(1-2), 25-29
 CODEN: JMCCF2; ISSN: 1381-1169
 PUBLISHER: Elsevier Science B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Production of hydrogen peroxide has been achieved by the
 catalytic oxidation of primary and secondary alcs.
 with oxygen, in presence of a palladium catalyst. The
 catalyst was a complex of palladium with a bidentate
 nitrogen ligand and an acid cocatalyst. 2,9-Dimethyl-4,7-diphenyl-
 1,10-phenanthroline was selected as the most efficient ligand, and
 perfluoroctanoic acid gave the best results as cocatalyst. In
 this work the effects of nitrogen ligands, acid cocatalyst, alcs.,
 as far as temperature and oxygen pressure are concerned, are
 investigated.
 IT 260963-89-1
 (hydrogen peroxide production from oxygen and alcs. using palladium
 complex catalysts)
 RN 260963-89-1 HCPLUS
 CN Palladium, bis(acetato- κ O) [2-(2-pyridinyl- κ N)-4,6-di-2-
 pyridinyl-1,3,5-triazine- κ N1]-, (SP-4-3)- (9CI) (CA INDEX
 NAME)



- CC 49-8 (Industrial Inorganic Chemicals)
 Section cross-reference(s): 45, 51, 67
- ST hydrogen peroxide prodn alc oxidn palladium complex catalyst; alc oxidn catalyst palladium complex H₂O₂ prodn
- IT Oxidation
- Oxidation catalysts
 (hydrogen peroxide production from oxygen and alcs. using palladium complex catalysts)
- IT Aldehydes, processes
 Ketones, processes
 (hydrogen peroxide production from oxygen and alcs. using palladium complex catalysts)
- IT Alcohols, reactions
 (primary; hydrogen peroxide production from oxygen and alcs. using palladium complex catalysts)
- IT Alcohols, reactions
 (secondary; hydrogen peroxide production from oxygen and alcs. using palladium complex catalysts)
- IT 64-19-7, Acetic acid, uses 76-05-1, Perfluoroacetic acid, uses 335-67-1, Perfluorooctanoic acid 3375-31-3D, Palladium diacetate, complexes 7440-05-3D, Palladium, complexes, uses 7647-01-0, Hydrogen chloride, uses 7664-38-2, Phosphoric acid, uses 7664-93-9, Sulfuric acid, uses 35679-81-3 95246-09-6 152506-86-0 152506-88-2 260963-87-9 260963-88-0
260963-89-1
 (hydrogen peroxide production from oxygen and alcs. using palladium complex catalysts)
- IT 7722-84-1P, Hydrogen peroxide, preparation
 (hydrogen peroxide production from oxygen and alcs. using palladium complex catalysts)
- IT 67-63-0, 2-Propanol, reactions 71-41-0, 1-Pentanol, reactions 93-54-9, 1-Phenyl-1-propanol 98-85-1, 1-Phenylethanol 100-51-6, Benzyl alcohol, reactions 104-76-7, 2-Ethylhexanol 105-13-5, 4-Methoxybenzyl alcohol 108-93-0, Cyclohexanol, reactions 111-87-5, 1-Octanol, reactions 123-96-6, 2-Octanol 698-87-3, 1-Phenyl-2-propanol 7782-44-7, Oxygen, reactions
 (hydrogen peroxide production from oxygen and alcs. using palladium complex catalysts)
- REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 14 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:794928 HCAPLUS

DOCUMENT NUMBER: 132:145749

TITLE: Metal-Assisted Unusual Hydroxylation at the Carbon Atom of the Triazine Ring in Dinuclear Ruthenium(II) and Osmium(II) Complexes Bridged by 2,4,6-Tris(2-pyridyl)-1,3,5-triazine: Synthesis, Structural Characterization, Stereochemistry, and Electrochemical Studies

AUTHOR(S) : Paul, Parimal; Tyagi, Beena; Bilakhya, Anvarhusen K.; Dastidar, Parthasarathi; Suresh, Eringathodi

CORPORATE SOURCE: Discipline of Silicates and Catalysis, Central Salt and Marine Chemicals Research Institute G. B. Marg, Bhavnagar, 364 002, India

SOURCE: Inorganic Chemistry (2000), 39(1), 14-22
CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

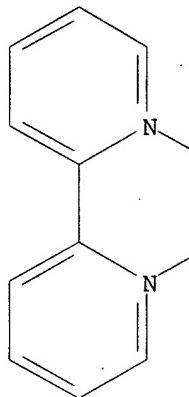
AB The reaction of *cis*-[M(bpy)₂Cl₂] (M = Ru(II), and Os(II)) with 2,4,6-tris(2-pyridyl)-1,3,5-triazine (tptz) in refluxing EtOH-H₂O gave dinuclear [{M(bpy)₂}₂(tptz-OH)](PF₆)₃·nH₂O (n = 1 for Ru and n = 0 for Os). In this reaction an unusual metal-induced hydroxylation at the C atom of the triazine ring of bridged tptz occurred. However, hydroxylation did not occur in the corresponding mononuclear complexes under similar reaction conditions. A comparative study revealed that sufficient electrophilicity on the C atom and free movement of the attached pyridyl ring promoted the hydroxylation reaction. The hydroxylated dinuclear complexes exist in two stereoisomeric forms, a rac form ($\Delta\Delta/\Lambda\Lambda$) and a meso form ($\Delta\Lambda/\Lambda\Delta$). Both diastereoisomers were isolated in pure form and characterized. The mol. structures of the rac form of Ru(II) complex (3-II) and meso form of the Os(II) complex (4-I) were established by single-crystal x-ray studies. Crystal data: complex 3-II, monoclinic, space group C2/c, a 24.584(7), b 14.309(4), c 41.044(13) Å, β 92.84(2)°, Z = 8, R = 0.179, wR₂ = 0.479; complex 4-I, triclinic, space group P.hivin.1, a 13.444(7), b 14.576(5), c 19.641(7) Å, α 98.21(3), β 101.67(4), γ 105.80(4)°, Z = 2, R = 0.093, wR₂ = 0.279. The poor data quality of 3-II did not allow anisotropic refinement of nonhydrogen atoms except Ru and P. A PLUTO drawing of this compound is given only to support the mol. structure. ¹H NMR data were used to characterize the diastereoisomers. The dinuclear complexes exhibit unusual electrochem. behavior; cathodic shifts of the metal-centered oxidns. and ligand-based first reduction compared to mononuclear complexes were observed. There is a splitting in the metal-centered oxidation potentials, indicating strong electronic communication between the metal centers. Comproportionation consts. (K_{com}) of the mixed-valence species were calculated; the values are in the range 6.03 + 10⁴ to 4.7 + 10⁶. Apparently a metal-metal interaction occurred by an electron-transfer mode across the low-lying π^* orbital of the bridged tptz.

IT 256635-39-9 256635-40-2 256635-41-3
(electrochem. formation and comproportionation kinetics of)

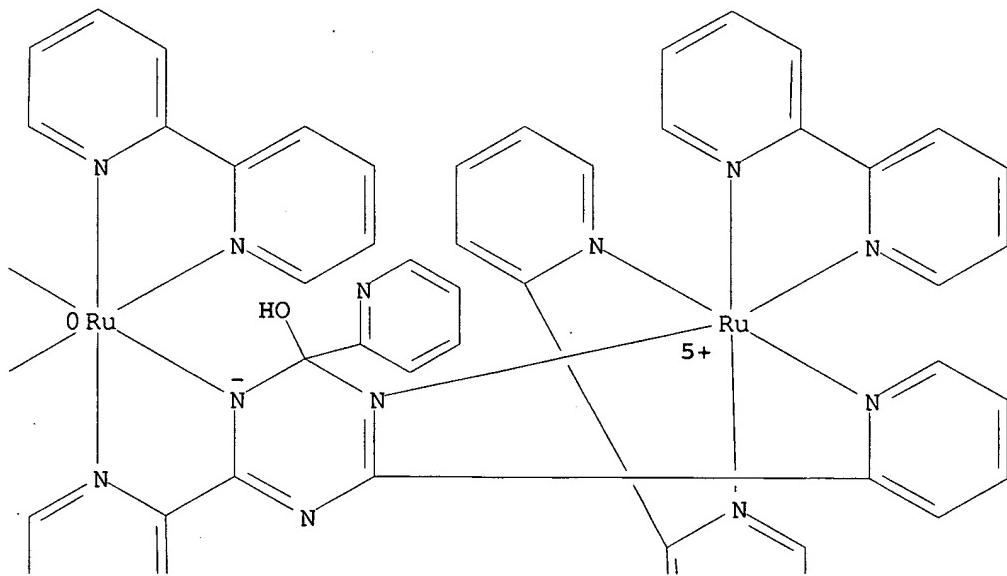
RN 256635-39-9 HCAPLUS

CN Ruthenium(4+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -[1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazin-2-olato- κ N1: κ N3]]di-, stereoisomer (9CI) (CA INDEX NAME)

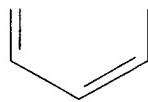
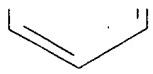
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PAGE 1-B



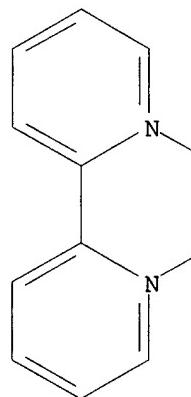
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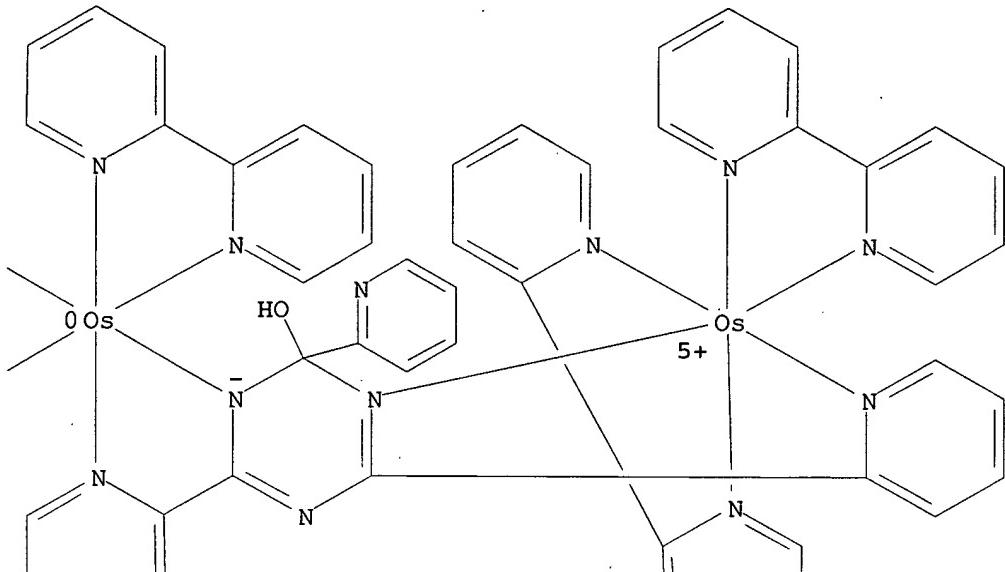
RN 256635-40-2 HCAPLUS

CN Osmium(4+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -
[1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-
triazin-2-olato- κ N1: κ N3]]di-, stereoisomer (9CI) (CA
INDEX NAME)

PAGE 1-A



PAGE 1-B



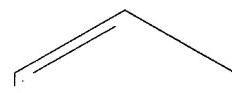
PAGE 2-B



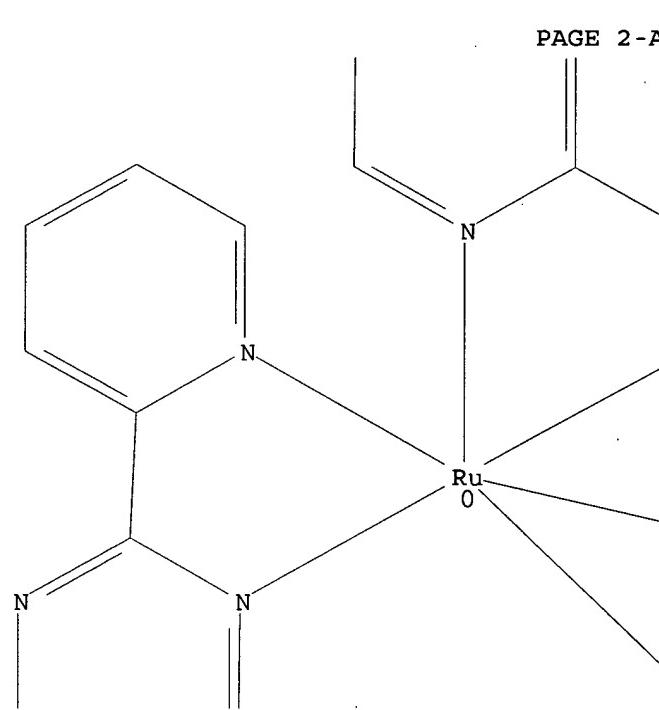
RN 256635-41-3 HCPLUS

CN Ruthenium(5+), bis(2,2'-bipyridine- κ N1, κ N1')(2,2':6',2
 ''-terpyridine- κ N1, κ N1', κ N1'')[μ -[2,4,6-tri(2-
 pyridyl- κ N)-1,3,5-triazine- κ N1: κ N3]]di- (9CI)
 (CA INDEX NAME)

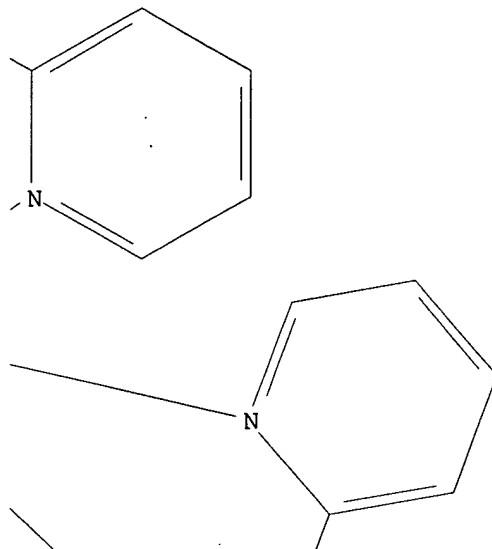
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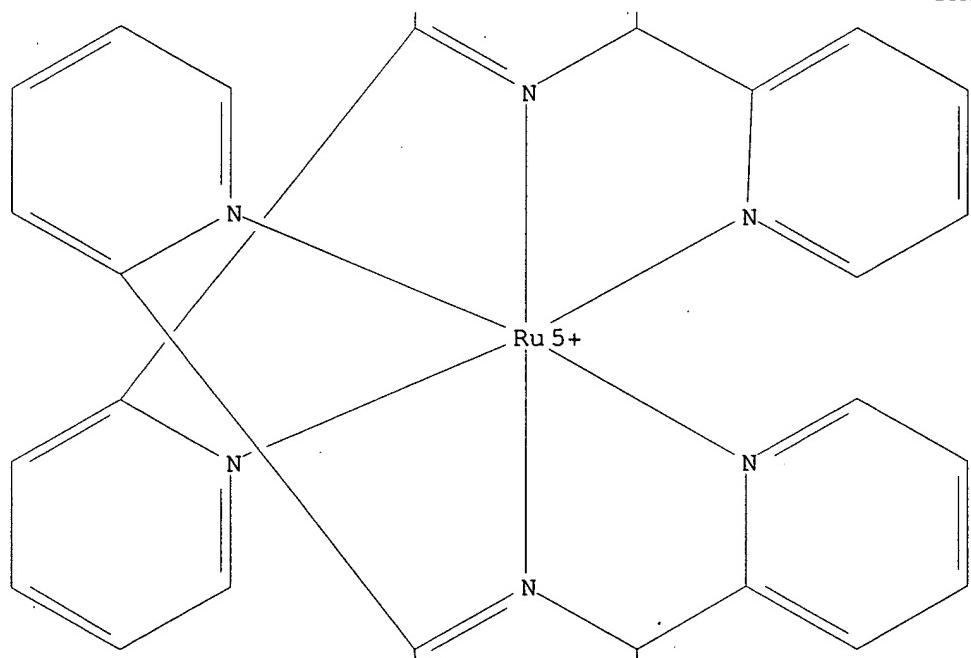
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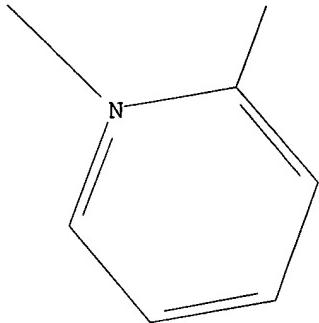
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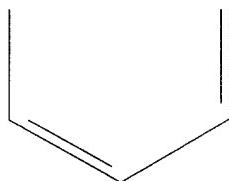
PAGE 3-A



PAGE 3-B



PAGE 4-A



IT 256931-71-2P
 (preparation and crystal structure of)
 RN 256931-71-2 HCAPLUS
 CN Ruthenium(3+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -[1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazin-2-olato- κ N1: κ N3]]di-, stereoisomer, tris[hexafluorophosphate(1-)], monohydrate (9CI) (CA INDEX NAME)

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CRN 256635-36-6

CMF C58 H45 N14 O Ru2 . 3 F6 P

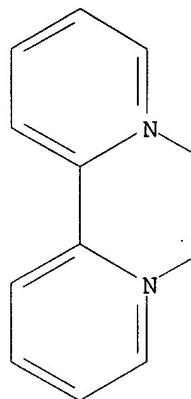
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CRN 256635-35-5

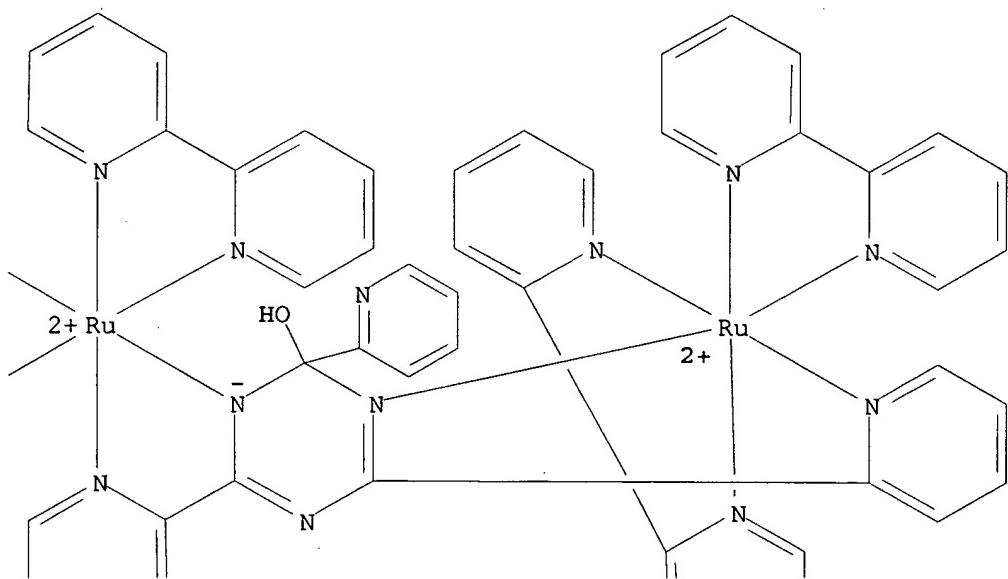
CMF C58 H45 N14 O Ru2

CCI CCS

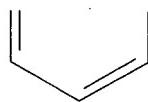
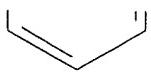
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PAGE 1-B

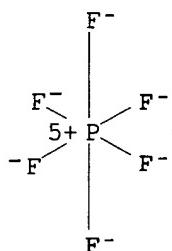


PAGE 2-B



CM 3

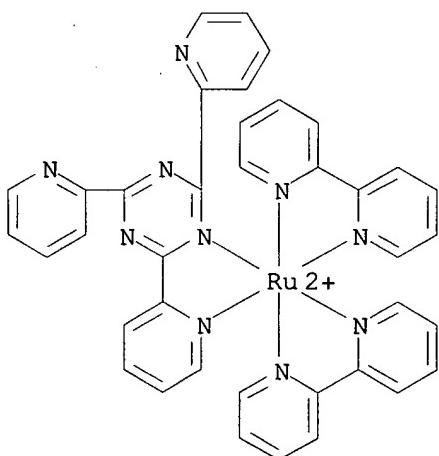
CRN 16919-18-9
 CMF F6 P
 CCI CCS



IT 134388-08-2P 256635-34-4P
 (preparation and oxidation and reduction potentials of)
 RN 134388-08-2 HCAPLUS
 CN Ruthenium(2+), bis(2,2'-bipyridine-κN1,κN1')[2-(2-pyridinyl-κN)-4,6-di-2-pyridinyl-1,3,5-triazine-κN1]-,
 (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 134388-07-1
 CMF C38 H28 N10 Ru
 CCI CCS

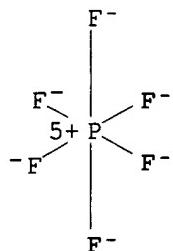


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 256635-34-4 HCPLUS

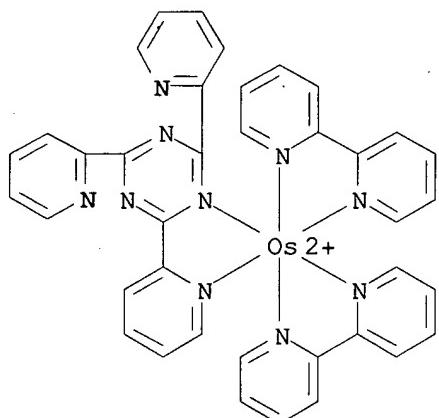
CN Osmium(2+), bis(2,2'-bipyridine-κN1,κN1')[2-(2-pyridinyl-κN)-4,6-di-2-pyridinyl-1,3,5-triazine-κN1]-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 256635-33-3

CMF C38 H28 N10 Os

CCI CCS

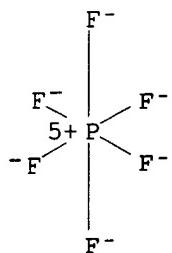


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



IT 256635-38-8P
 (preparation, crystal structure, oxidation and reduction potentials, electrochem. oxidation, UV-visible and proton NMR spectra, and mechanistic aspects of ligand hydroxylation)

RN 256635-38-8 HCAPLUS

CN Osmium(3+), tetrakis(2,2'-bipyridine-κN1,κN1') [μ-[1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazin-2-olato-κN1:κN3]]di-, stereoisomer, tris[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

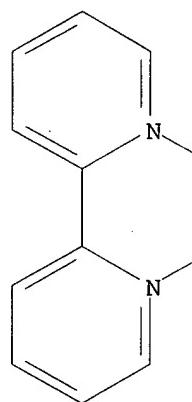
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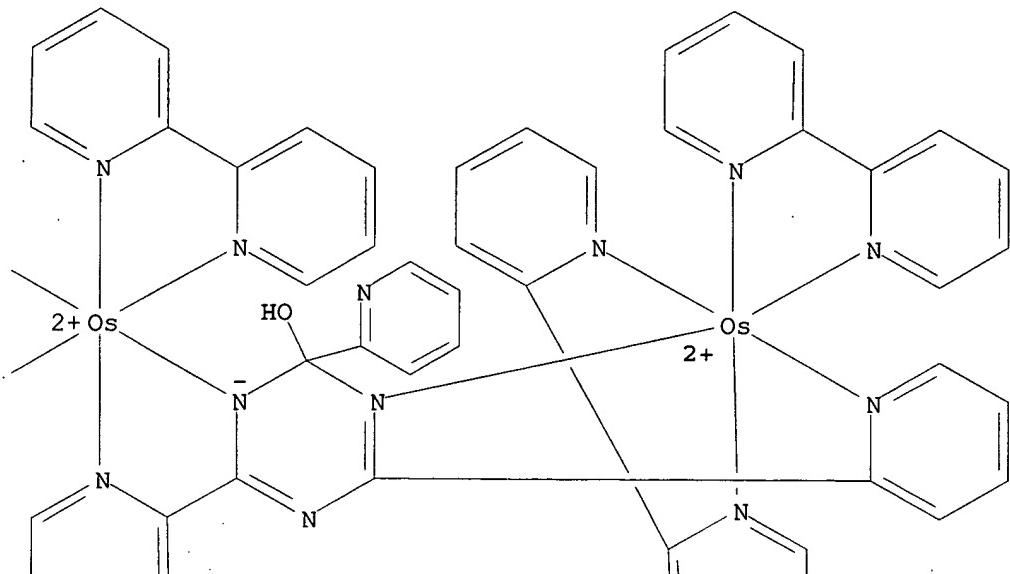
CMF C58 H45 N14 O Os2

CCI CCS

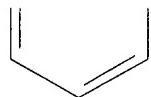
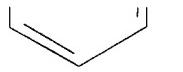
PAGE 1-A



PAGE 1-B



PAGE 2-B

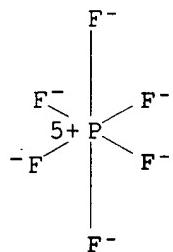


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



IT 256934-37-9P

(preparation, mol. structure, oxidation and reduction potentials,
electrochem. oxidation, UV-visible and proton NMR
spectra, and mechanistic aspects of ligand hydroxylation)

RN 256934-37-9 HCAPLUS

CN Ruthenium(3+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -[1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazin-2-olato- κ N1: κ N3]]di-, stereoisomer, tris[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

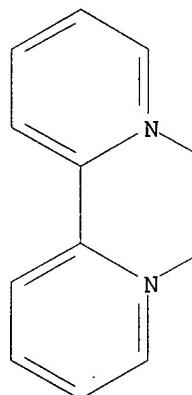
CM 1

CRN 256934-36-8

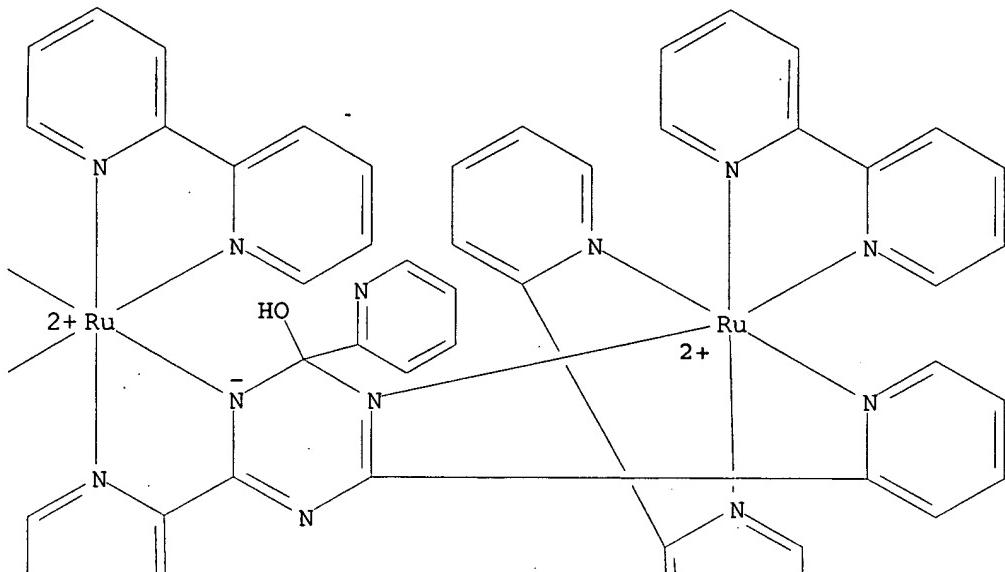
CMF C58 H45 N14 O Ru2

CCI CCS

PAGE 1-A



PAGE 1-B



PAGE 2-B

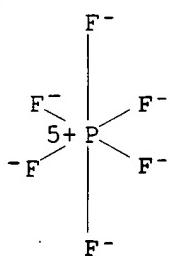


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



IT 134388-10-6P
 (preparation, oxidation and reduction potentials, and
 electrochem. oxidation)

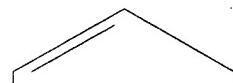
RN 134388-10-6 HCPLUS

CN Ruthenium(4+), bis(2,2'-bipyridine- κ N1, κ N1')(2,2':6',2
''-terpyridine- κ N1, κ N1', κ N1'')[μ -[2,4,6-tri(2-
pyridinyl- κ N)-1,3,5-triazine- κ N1: κ N3]]di-,
tetrakis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

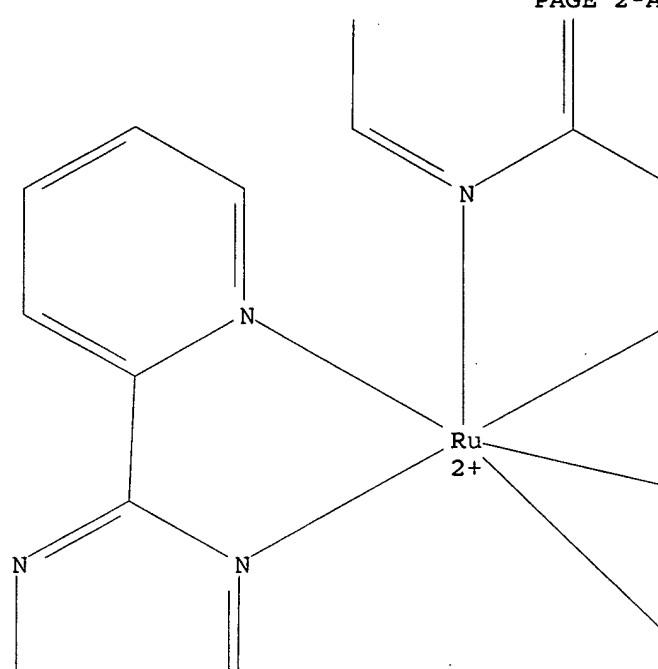
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CRN 134388-09-3
CMF C53 H39 N13 Ru2
CCI CCS

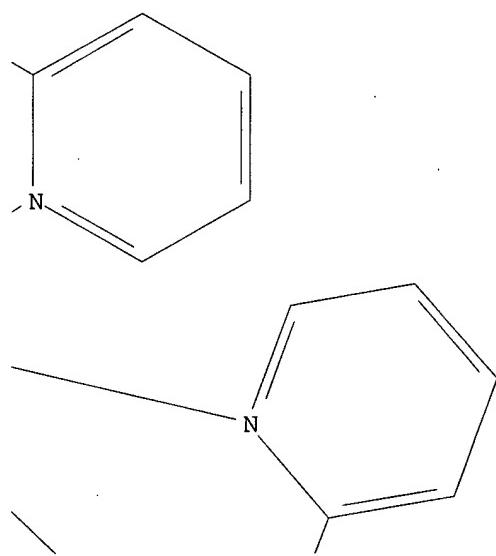
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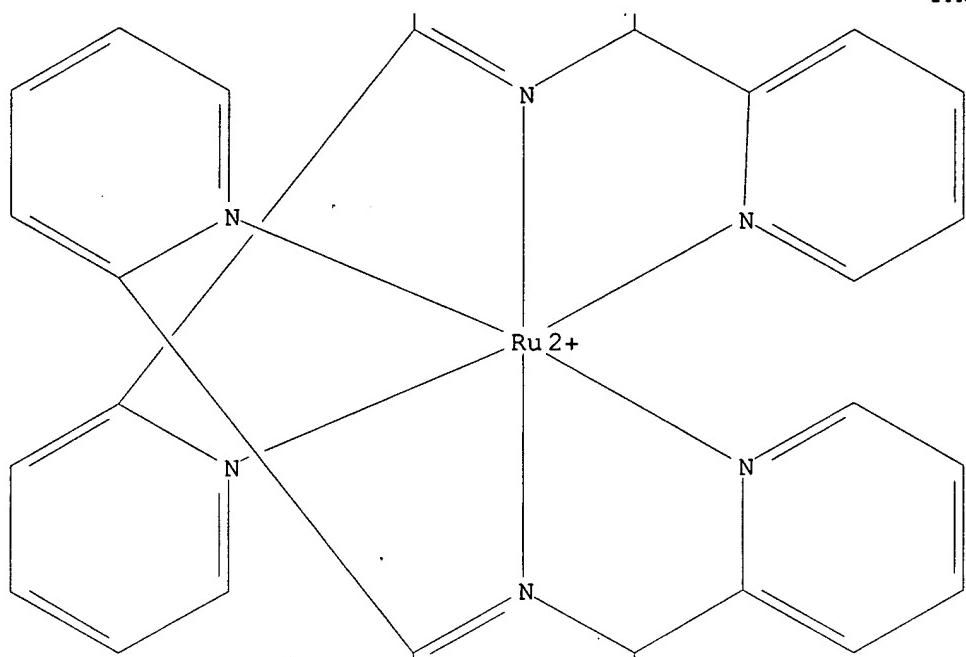
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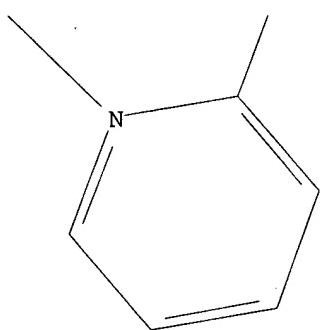
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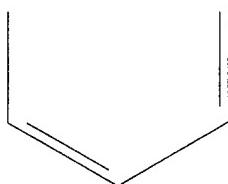
PAGE 3-A



PAGE 3-B

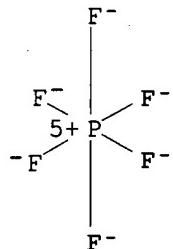


PAGE 4-A



CM 2

CRN 16919-18-9
 CMF F6 P
 CCI CCS



IT 256635-36-6P 256933-98-9P
 (preparation, oxidation and reduction potentials, electrochem.
 oxidation, UV-visible and proton NMR spectra, and
 mechanistic aspects of ligand hydroxylation)

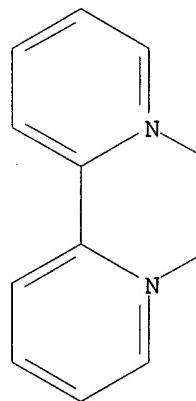
RN 256635-36-6 HCAPLUS

CN Ruthenium(3+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -
 [1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-
 triazin-2-olato- κ N1: κ N3] di-, stereoisomer,
 tris[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

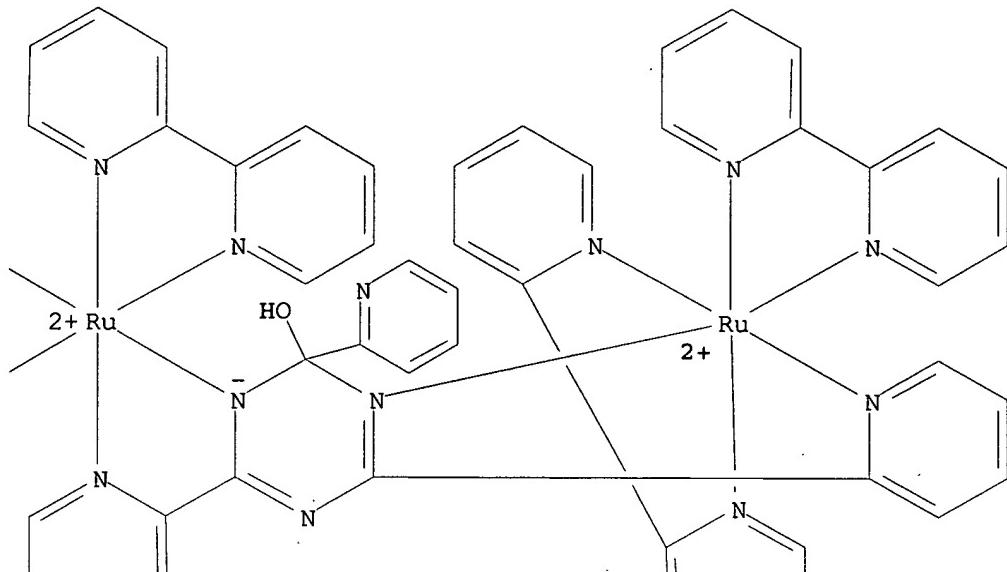
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CRN 256635-35-5
 CMF C58 H45 N14 O Ru2
 CCI CCS

PAGE 1-A



PAGE 1-B

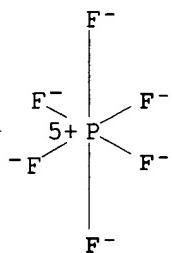


PAGE 2-B



CM 2

CRN 16919-18-9
 CMF F6 P
 CCI CCS

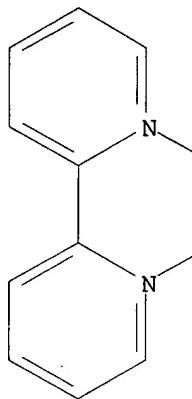


RN 256933-98-9 HCAPLUS
 CN Osmium(3+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -[1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazin-2-olato- κ N1: κ N3]]di-, stereoisomer, tris[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

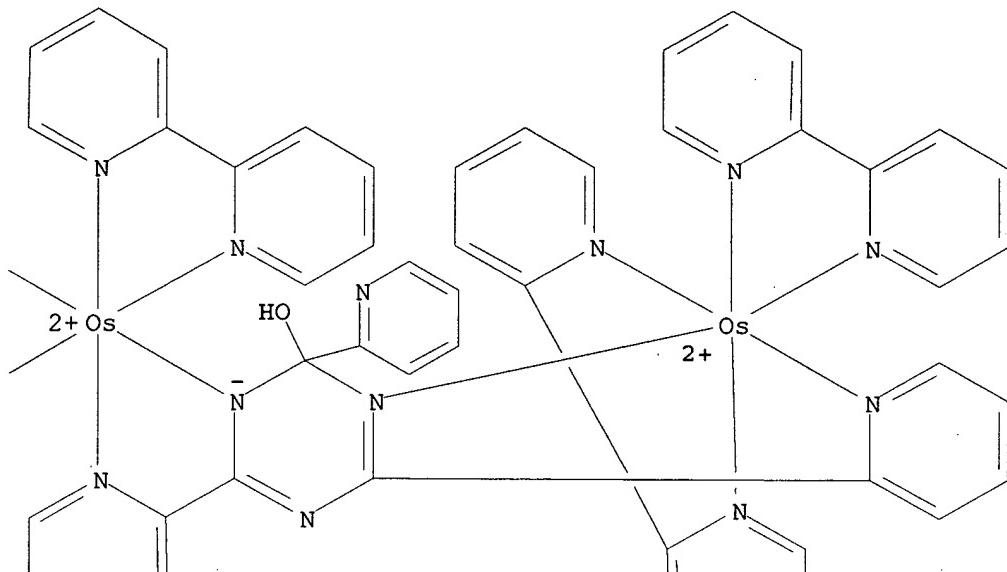
CM 1

CRN 256933-97-8
CMF C58 H45 N14 O Os2
CCI CCS

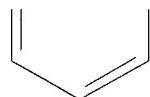
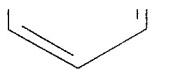
PAGE 1-A



PAGE 1-B



PAGE 2-B

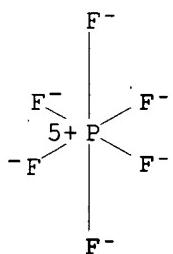


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



IT 175918-24-8

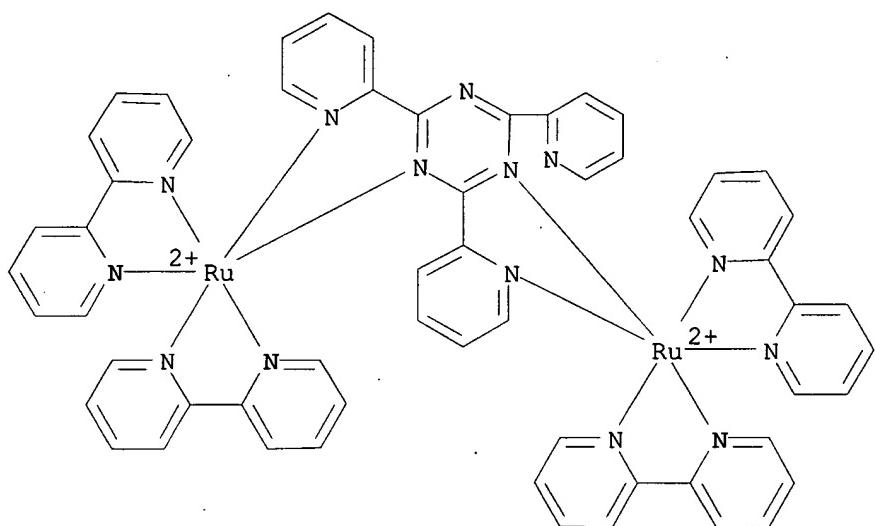
(reformulation as dinuclear ruthenium complex containing hydroxylated tris(pyridyl)triazine ligand)

RN 175918-24-8 HCPLUS

CN Ruthenium(4+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -[2,4-di(2-pyridinyl- κ N)-6-(2-pyridinyl)-1,3,5-triazine- κ N1: κ N3] di-, tetrakis[hexafluorophosphate(1-)] (9CI)
(CA INDEX NAME)

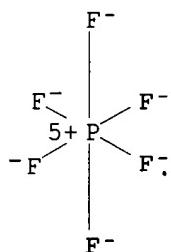
CM 1

CRN 175918-23-7
CMF C58 H44 N14 Ru2
CCI CCS



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 72, 73, 75

IT Oxidation potential
(of ruthenium and osmium dinuclear complexes of
trispyridyltriazine ligand C-hydroxylated on triazine ring, and
mononuclear analogs)

IT 256635-39-9 256635-40-2 256635-41-3
(electrochem. formation and comproportionation kinetics of)

- IT 256931-71-2P
 (preparation and crystal structure of)
- IT 134388-08-2P 256635-34-4P
 (preparation and oxidation and reduction potentials of)
- IT 256635-38-8P
 (preparation, crystal structure, oxidation and reduction potentials, electrochem. oxidation, UV-visible and proton NMR spectra, and mechanistic aspects of ligand hydroxylation)
- IT 256934-37-9P
 (preparation, mol. structure, oxidation and reduction potentials, electrochem. oxidation, UV-visible and proton NMR spectra, and mechanistic aspects of ligand hydroxylation)
- IT 134388-10-6P
 (preparation, oxidation and reduction potentials, and electrochem. oxidation)
- IT 256635-36-6P 256933-98-9P
 (preparation, oxidation and reduction potentials, electrochem. oxidation, UV-visible and proton NMR spectra, and mechanistic aspects of ligand hydroxylation)
- IT 175918-24-8
 (reformulation as dinuclear ruthenium complex containing hydroxylated tris(pyridyl)triazine ligand)

REFERENCE COUNT: 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 15 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:310425 HCPLUS

DOCUMENT NUMBER: 131:38774

TITLE: Mononuclear and binuclear rhenium(I) carbonyl complexes of 2,4,6-tris(2-pyridyl)-1,3,5-triazine (TPT), $\left[\{\text{ReCl}(\text{CO})_3\}_n\text{TPT}\right]$ ($n = 1, 2$), and the formation of mixed-metal compounds with Re-TPT-M ($M = \text{MnII}, \text{CoII}, \text{CuII}$) bonds

AUTHOR(S): Granijo, Juan

CORPORATE SOURCE: Departamento de Ciencias Químicas, Facultad de Ingeniería y Administración, Universidad de La Frontera, Temuco, 54-D, Chile

SOURCE: Polyhedron (1999), 18(7), 1061-1066

CODEN: PLYHDE; ISSN: 0277-5387

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The novel mononuclear complex $[\text{ReCl}(\text{CO})_3\text{TPT}]$ was isolated where the triazine ligand is acting in a bidentate chelate mode. The metalloligand properties of this Re(I) complex were demonstrated when it reacts bidentately either with the $\{\text{ReCl}(\text{CO})_3\}$ fragment or with the $[\text{M}(\text{hfac})_2]$ ($\text{M} = \text{Mn, Co, Cu}; \text{hfac} =$ hexafluoroacetylacetone ion) complexes, producing the homobinuclear $[\{\text{ReCl}(\text{CO})_3\}_2\text{TPT}]$ and the heterobimetallic $[(\text{CO})_3\text{ClRe}(\text{TPT})\text{M}(\text{hfac})_2]$ substances, resp. In MeOH solution the binuclear Re-TPT-Re complex forms the $[\{\text{ReCl}(\text{CO})_3\}_2\text{TPT}]\cdot\text{MeOH}$ complex, where a methoxide group seems to be interacting with the acidic triazine ring and the N atom of the uncoordinated pyridyl group is protonated. In general, the studies in solution of the dirhenium Re-TPT-Re complex show evidence of its interaction with the solvent mols. apparently in an acid-base fashion. However, the mixed-metal Re-TPT-M derivs. show dissociation reactions in solution generating the parent

mononuclear [ReCl(CO)₃(TPT)] compound and the [M(hfac)₂] complexes. The systems under study were characterized through IR, ¹H NMR and electronic spectroscopy, electrochem. and magnetic moment measurements.

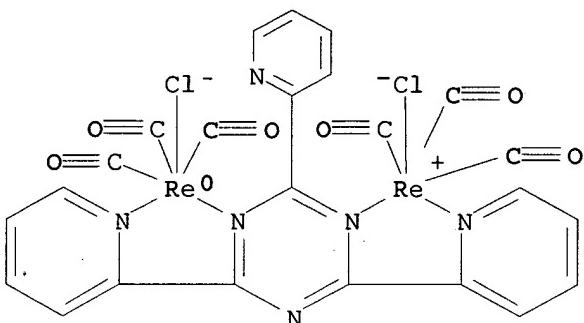
IT 226896-11-3 226896-12-4 226896-13-5

226896-14-6 226896-15-7

(elec. potential of couple containing)

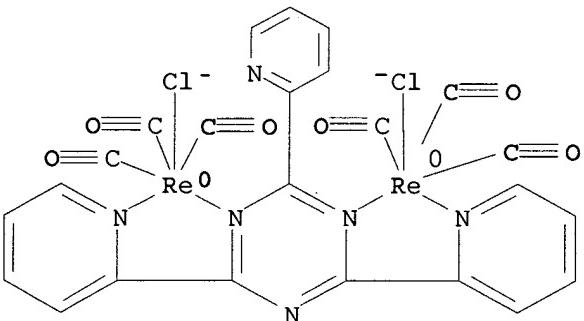
RN 226896-11-3 HCPLUS

CN Rhenate(1-), hexacarbonyldichloro[μ -[2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N1: κ N3]]di-, stereoisomer (9CI) (CA INDEX NAME)



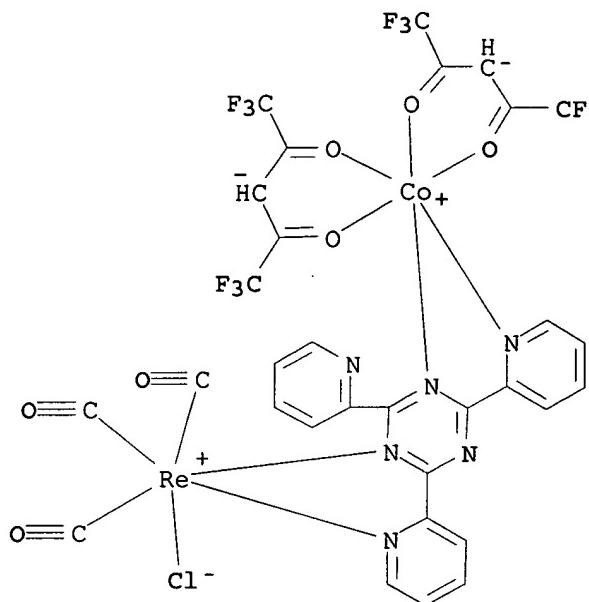
RN 226896-12-4 HCPLUS

CN Rhenate(2-), hexacarbonyldichloro[μ -[2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N1: κ N3]]di-, stereoisomer (9CI) (CA INDEX NAME)



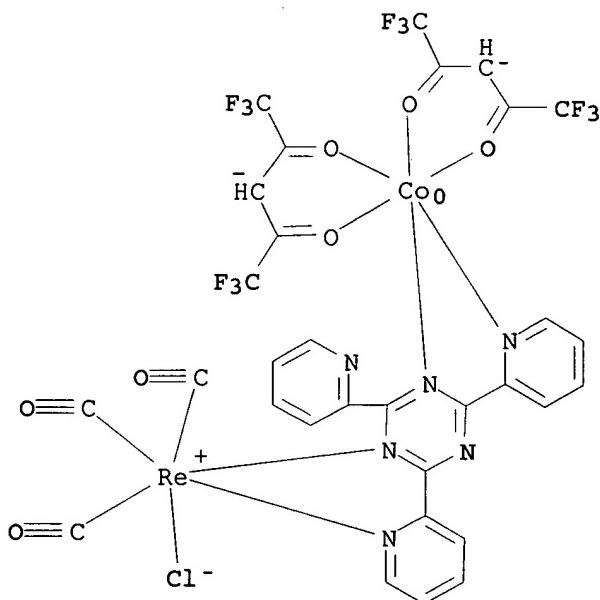
RN 226896-13-5 HCPLUS

CN Rhenate(1-), [bis(1,1,1,5,5-hexafluoro-2,4-pentanedionato- κ O, κ O')cobaltate]tricarbonylchloro[μ -[2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N1: κ N3]]-, stereoisomer (9CI) (CA INDEX NAME)



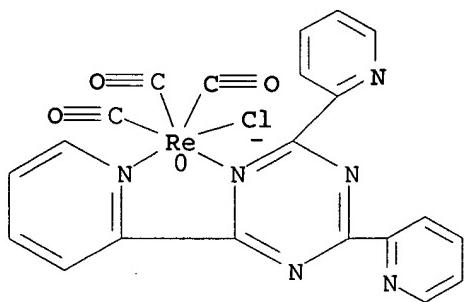
RN 226896-14-6 HCAPLUS

CN Rhenate(2-), [bis(1,1,1,5,5-hexafluoro-2,4-pentanedionato- κ O, κ O')cobaltate]tricarbonylchloro[μ -[2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N1: κ N3]]-, stereoisomer (9CI) (CA INDEX NAME)



RN 226896-15-7 HCAPLUS

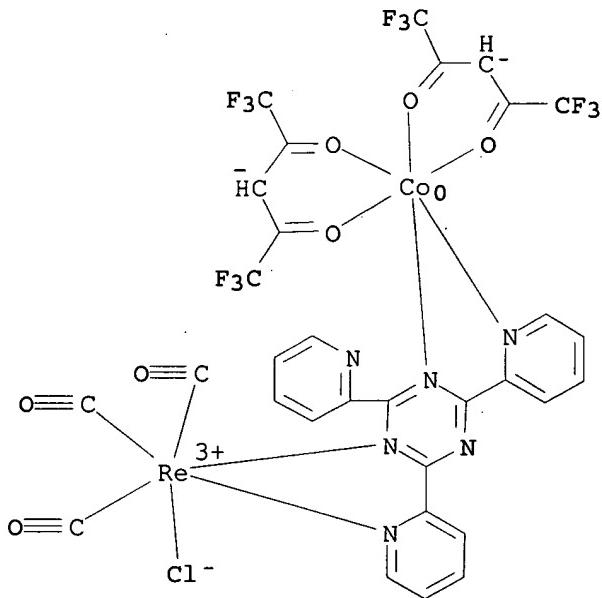
CN Rhenate(1-), tricarbonylchloro[6-(2-pyridinyl- κ N)-2,4-di(2-pyridinyl-1,3,5-triazine- κ N1)]-, (OC-6-44)- (9CI) (CA INDEX NAME)



IT 226896-08-8P
(preparation and cyclic voltammetry)

RN 226896-08-8 HCPLUS

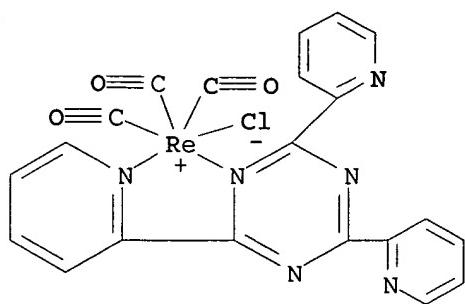
CN Rhenium, [bis(1,1,1,5,5-hexafluoro-2,4-pentanedionato- κ O, κ O')cobalt]tricarbonylchloro[μ -[2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N1: κ N3]]-, stereoisomer (9CI) (CA INDEX NAME)



IT 226896-03-3P
(preparation and cyclic voltammetry and solvatochromism and reaction with rhenium carbonyl acetonitrile complex and transition metal hexafluoroacetylacetone complexes)

RN 226896-03-3 HCPLUS

CN Rhenium, tricarbonylchloro[6-(2-pyridinyl- κ N)-2,4-di-2-pyridinyl-1,3,5-triazine- κ N1]-, (OC-6-44)- (9CI) (CA INDEX NAME)

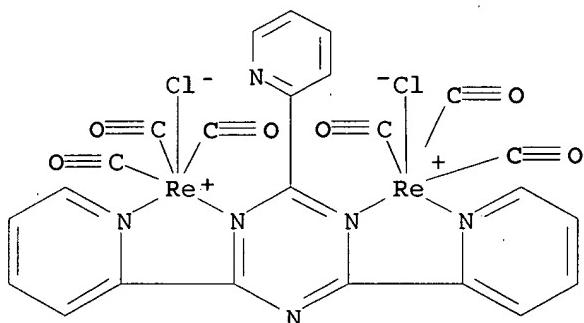


IT 226896-04-4P

(preparation and solvatochromism and cyclic voltammetry)

RN 226896-04-4 HCAPLUS

CN Rhenium, hexacarbonyldichloro[μ-[2-(2-pyridinyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1:κN3]]di-, stereoisomer (9CI) (CA INDEX NAME)

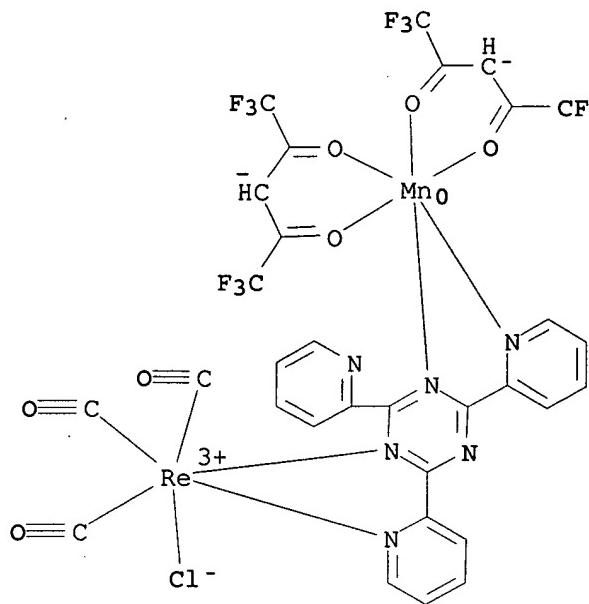


IT 226896-06-6P 226896-10-2P 226909-23-5P

(preparation of)

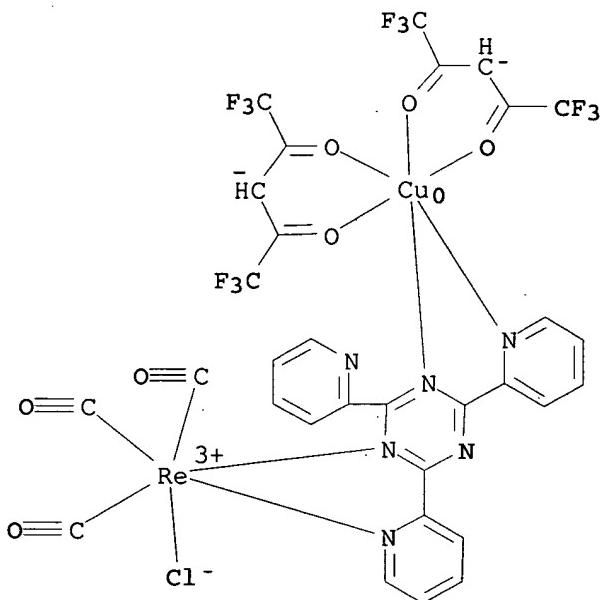
RN 226896-06-6 HCAPLUS

CN Rhenium, [bis(1,1,1,5,5-hexafluoro-2,4-pentanedionato-κO,κO')manganese]tricarbonylchloro[μ-[2-(2-pyridinyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1:κN3]]-, stereoisomer (9CI) (CA INDEX NAME)



RN 226896-10-2 HCAPLUS

CN Rhenium, [bis(1,1,1,5,5-hexafluoro-2,4-pentanedionato- κ O, κ O')copper]tricarbonylchloro[μ -[2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N1: κ N3]]-, stereoisomer (9CI) (CA INDEX NAME)

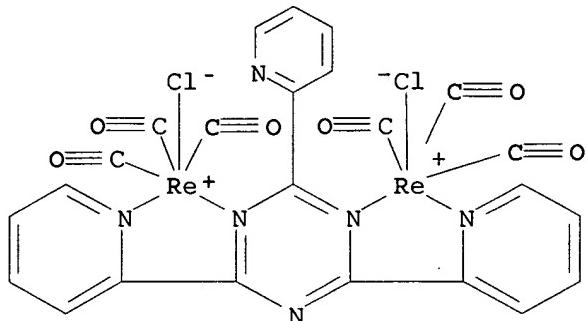


RN 226909-23-5 HCAPLUS

CN Rhenium, hexacarbonyldichloro[μ -[2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazine- κ N1: κ N3]]di-, stereoisomer, compd. with methanol (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 226896-04-4
 CMF C24 H12 Cl2 N6 O6 Re2
 CCI CCS



CM 2

CRN 67-56-1
 CMF C H4 O

H₃C—OH

- CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 72, 73
- IT **Oxidation** potential
Reduction potential
 (of rhenium carbonyl tris(pyridyl)triazine complexes
 with/without transition metal hexafluoroacetylacetone)
- IT 226896-11-3 226896-12-4 226896-13-5
 226896-14-6 226896-15-7
 (elec. potential of couple containing)
- IT 226896-08-8P
 (preparation and cyclic voltammetry)
- IT 226896-03-3P
 (preparation and cyclic voltammetry and solvatochromism and reaction
 with rhenium carbonyl acetonitrile complex and transition metal
 hexafluoroacetylacetone complexes)
- IT 226896-04-4P
 (preparation and solvatochromism and cyclic voltammetry)
- IT 226896-06-6P 226896-10-2P 226909-23-5P
 (preparation of)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L16 ANSWER 16 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1998:636313 HCPLUS
 DOCUMENT NUMBER: 129:350143
 TITLE: Synthesis and Characterization of Rhodium
 Complexes Containing 2,4,6-Tris(2-pyridyl)-

1,3,5-triazine and Its Metal-Promoted
 Hydrolytic Products: Potential Uses of the New
 Complexes in Electrocatalytic Reduction of
 Carbon Dioxide

AUTHOR(S) : Paul, Parimal; Tyagi, Beena; Bilakhya,
 Anvarhusen K.; Bhadbhade, Mohan M.; Suresh,
 Eringathodi; Ramachandraiah, G.

CORPORATE SOURCE: Disciplines of Silicates and Catalysis
 Sophisticated Analytical Instruments
 Laboratory and Discipline of Reactive
 Polymers, Central Salt and Marine Chemicals
 Research Institute, Bhavnagar, 364 002, India

SOURCE: Inorganic Chemistry (1998), 37(22), 5733-5742
 CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The reaction of 2,4,6-tris(2-pyridyl)-1,3,5-triazine (tptz) with RhCl₃·3H₂O was studied under different exptl. conditions. This reaction in EtOH gave [Rh(tptz)Cl₃]·2H₂O (1), whereas the bis-chelate complex [Rh(tptz)₂][ClO₄]₃·2H₂O (2) was obtained in a two-step reaction in acetone in which the chlorides from RhCl₃ were removed in using AgClO₄, followed by the addition of tptz. 1 And 2, when refluxed in EtOH-H₂O (1:1), resulted in metal-promoted hydrolysis of tptz to the bis(2-pyridylcarbonyl)amide anion (bpca) and 2-picolinamide (pa), yielding [Rh(bpca)(pa)Cl][PF₆]·H₂O (3) and [Rh(bpca)₂][ClO₄] (6), resp. A mixed-ligand complex, [Rh(bpca)(tpy)][PF₆]₂·MeCN (4), was obtained by the reaction of either 1 with terpyridine (tpy) or [Rh(tpy)Cl₃] (5) with tptz in EtOH-H₂O medium. Crystal data: 1, monoclinic, space group P21/c, a 11.642(2), b 7.302(2), c 24.332(3) Å, β 96.420(10)°, Z = 4, R = 0.040, 4, triclinic, space group P.hivin.1, a 9.581(1), b 12.933(2), c 14.493(2) Å, α 82.480(10), β 71.810(10), γ 75.100(10)°, Z = 2, R = 0.030. The two H₂O mols. in 1 make short contacts with the C atoms adjacent to the metal-bound N atom of the triazine ring which provides insight about the intermediate of the hydrolysis. X-ray and NMR data suggest that the electron-withdrawing effect of the metal ion is the major responsible factor for the hydrolysis of tptz. Cyclic voltammograms of the complexes exhibit a metal-based 2e⁻ reduction (Rh(III) → Rh(I)) at the potential range -0.42 to -0.98 V vs. SCE, followed by ligand-based redox couple(s). These novel complexes show effective catalytic properties for the electrocatalytic reduction of CO₂ in the potential range -1.26 to -1.44 V.

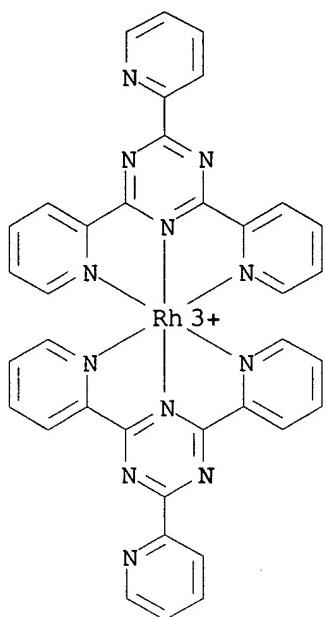
IT 215370-38-0P
 (preparation, NMR spectra, metal-promoted ligand hydrolysis, cyclic voltammetry and catalyst for carbon dioxide electrochem. reduction)

RN 215370-38-0 HCPLUS

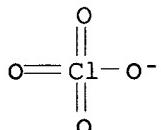
CN Rhodium(3+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)-, triperchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 215370-37-9
 CMF C36 H24 N12 Rh
 CCI CCS



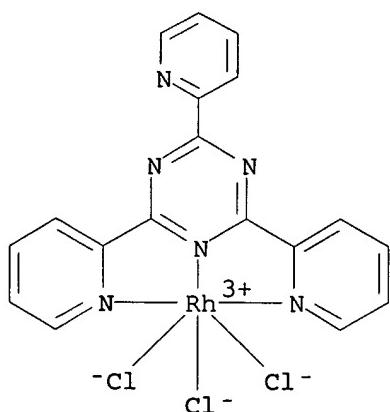
CM 2

CRN 14797-73-0
CMF Cl O4

IT 215370-36-8P
 (preparation, crystal structure, NMR spectra, metal-promoted ligand hydrolysis, cyclic voltammetry and catalyst for carbon dioxide reduction)

RN 215370-36-8 HCAPLUS

CN Rhodium, trichloro[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, dihydrate, (OC-6-21)- (9CI) (CA INDEX NAME)



●2 H₂O

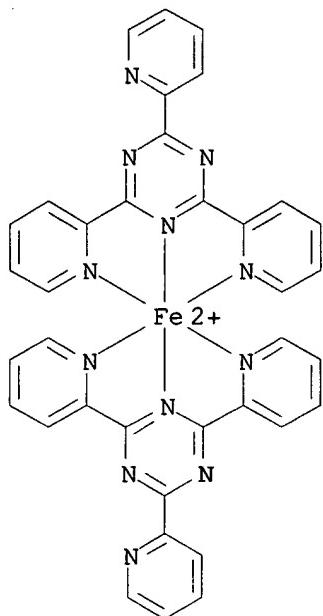
- CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
- ST crystal structure rhodium pyridyltriazine pyridylcarboxylamido terpyridine; rhodium pyridyltriazine pyridylcarboxylamido terpyridine picolinamide prepn; electrochem redn catalyst rhodium pyridyltriazine pyridylcarboxylamido; electron withdrawing effect rhodium pyridyltriazine hydrolysis
- IT Reduction catalysts
(electrochem.; rhodium complexes with 2,4,6-tris(2-pyridyl)-1,3,5-triazine, bis(2-pyridylcarbonyl)amido and terpyridine for electrochem. reduction of carbon dioxide)
- IT 124-38-9, Carbon dioxide, reactions
(electrochem. reduction catalyzed by rhodium complexes with 2,4,6-tris(2-pyridyl)-1,3,5-triazine, bis(2-pyridylcarbonyl)amido and terpyridine)
- IT 71-47-6P, preparation
(preparation from electrochem. reduction of carbon dioxide catalyzed by rhodium complexes with 2,4,6-tris(2-pyridyl)-1,3,5-triazine, bis(2-pyridylcarbonyl)amido and terpyridine)
- IT 215370-38-0P
(preparation, NMR spectra, metal-promoted ligand hydrolysis, cyclic voltammetry and catalyst for carbon dioxide electrochem. reduction)
- IT 215370-43-7P
(preparation, crystal structure, NMR spectra, cyclic voltammetry and catalyst for carbon dioxide electrochem. reduction)
- IT 215370-36-8P
(preparation, crystal structure, NMR spectra, metal-promoted ligand hydrolysis, cyclic voltammetry and catalyst for carbon dioxide reduction)
- IT 215370-40-4P
(preparation, cyclic voltammetry and catalyst for carbon dioxide electrochem. reduction)
- IT 35978-56-4P
(preparation, metal-promoted ligand hydrolysis, cyclic voltammetry and catalyst for carbon dioxide electrochem. reduction)
- REFERENCE COUNT: 73 THERE ARE 73 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 17 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1996:735329 HCAPLUS
 DOCUMENT NUMBER: 126:79984
 TITLE: High-sensitivity microdetermination of
sub-micromolar concentrations of levodopa,
carbidopa and α -methyldopa using a
coupled redox-complexation reaction
 AUTHOR(S): Issopoulos, Prodromos B.; Salta, Sophia E.
 CORPORATE SOURCE: Lab. Inorganic Pharmaceutical Analytical
Chem., Dep. Chem., Univ. Ioannina, Ioannina,
GR-451 10, Greece
 SOURCE: Farmaco (1996), 51(10), 673-678
 CODEN: FRMCE8
 PUBLISHER: Societa Chimica Italiana
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB A high-sensitive and simultaneously accurate, simple and rapid spectrophotometric method for the determination of sub-micromolar concns. of levodopa (I), carbidopa (II) and α -Methyldopa (III) in the range of 0.13-3.55 I, 0.10-3.27 II and 0.10-2.94 μ mol/L III was based on a coupled redox-complexation reaction in which the first step was the oxidation of the I, II, and III by Fe (III) and the second step included the complexation of the Fe (II), resulting from the preceding redox reaction, with 2,4,6-tris(2-pyridyl)-1,3,5-triazine (TPTZ) and the formation of a stable deep-blue colored bis-chelate complex [Fe(II)-(TPTZ)₂]²⁺ in a moderate acidic medium (pH 4.60 \pm 0.05), which exhibited an absorption maximum at λ_{max} = 595 nm. The apparent molar absorptivities, and the Sandell's sensitivities -both calculated on anhydrous drugs examined- were 2.60 \pm 105 mol⁻¹ cm⁻¹ and 0.76 ng/cm² for I; 1.77 \pm 105 mol⁻¹ cm⁻¹ and 1.28 ng/cm² for II and 2.50 \pm 105 mol⁻¹ cm⁻¹ and 0.84 ng/cm² for III. Beer's law was obeyed in the concentration range 25-700 ppb for each drug. The regression line equation for each medicine was calculated with correlation coefficient of 0.9999, 1.0000 and 1.0000 for I, II, and III, resp. The results obtained from the determination of the drugs studied by using both the described procedure and the USP XXIII official methods were statistically compared by means of the Student's t-test and by the variance ratio F-test and no significant difference was observed

IT 22452-38-6
 (spectrophotometric microdetn. of levodopa and carbidopa and
 methyldopa based on coupled redox-complexation reaction)
 RN 22452-38-6 HCAPLUS
 CN Iron(2+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 64-2 (Pharmaceutical Analysis)
Section cross-reference(s) : 1

IT 22452-38-6

(spectrophotometric microdetn. of levodopa and carbidopa and
methyldopa based on coupled redox-complexation reaction)

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 18 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:646487 HCPLUS

DOCUMENT NUMBER: 125:276892

TITLE: Photoinitiator composition containing
boron-based coordination compounds and
halomethyl triazines, polymerizable
composition, and method

INVENTOR(S): Tanaka, Yasuhiro; Toba, Yasumasa; Yasuike,
Madoka

PATENT ASSIGNEE(S): Toyo Ink Mfg Co, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

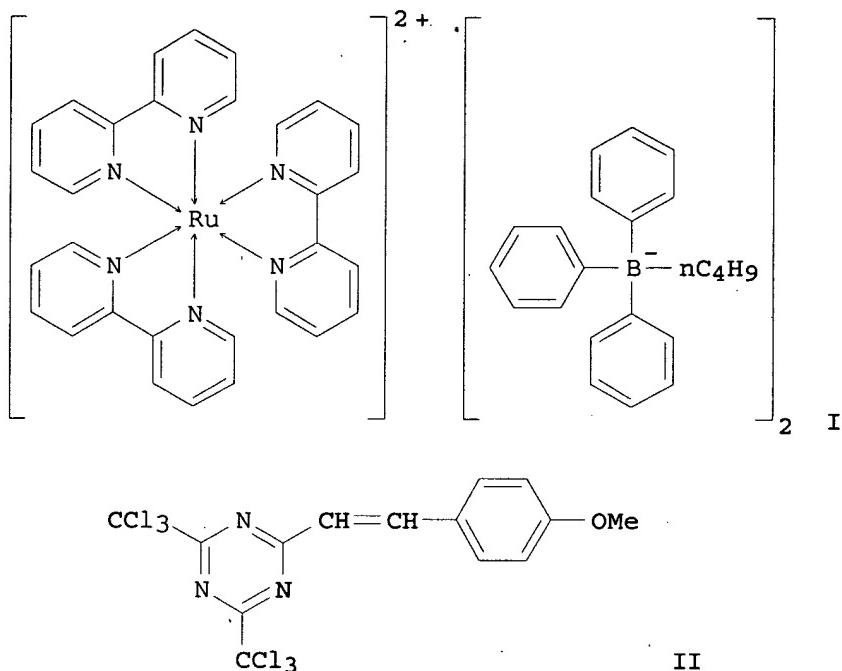
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 08217812	A2	19960827	JP 1995-29263	1995 0217
PRIORITY APPLN. INFO. :			JP 1995-29263	1995 0217

OTHER SOURCE(S) :
GI

MARPAT 125:276892



AB The title photoinitiators consist of a chemical compound formed from a transition metal coordination complex cation and an organic boron anion, and a triazine compound which possesses trihalomethyl groups and a chromophore group. Pentaerythritol triacrylate was polymerized using I and II as catalysts.

IT 182897-22-9
(photoinitiator composition containing boron-based coordination compds. and halomethyl triazines, polymerizable composition, and method)

RN 182897-22-9 HCAPLUS

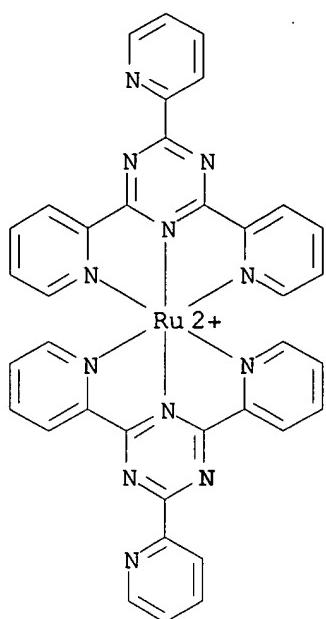
CN Ruthenium(2+), bis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, (OC-6-1'2')-, bis[(T-4)-butyltriphenylborate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 61037-16-9

CMF C36 H24 N12 Ru

CCI CCS

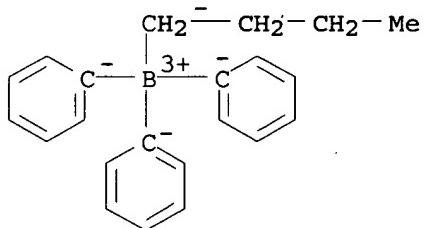


CM 2

CRN 47252-39-1

CMF C22 H24 B

CCI CCS



IC ICM C08F002-50

ICS C08G059-40; C08G059-68; C09D004-00

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 67

ST boron transition metal coordination compd catalyst;
halomethyl triazine catalyst photochem polymnIT Polymerization catalysts
(photochem., photoinitiator composition containing boron-based
coordination compds. and halomethyl triazines, polymerizable
composition, and method)IT 24481-45-6 24481-46-7 42573-57-9 42880-04-6 42880-09-1
69432-40-2 69432-50-4 97802-67-0 97802-70-5 97802-84-1
173856-10-5 173856-11-6 173856-12-7 182575-26-4
182575-27-5 182575-28-6 182575-29-7 182575-30-0
182575-31-1 182575-32-2 182575-33-3 182575-34-4
182575-35-5 182575-36-6 182897-22-9

(photoinitiator composition containing boron-based coordination compds.
and halomethyl triazines, polymerizable composition, and method)

L16 ANSWER 19 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:584530 HCPLUS

DOCUMENT NUMBER: 123:43007

TITLE: An electrochemical and spectroelectrochemical investigation of bis(2,2'-bipyridine)(2,4,6-tris(2-pyridyl)triazine)ruthenium(II): a potential building block for supramolecular systems

AUTHOR(S): Berger, Robert M.; Holcombe, Joel R.

CORPORATE SOURCE: Department of Chemistry, Indiana University-Purdue University Fort Wayne, Fort Wayne, IN, 46805, USA

SOURCE: Inorganica Chimica Acta (1995), 232(1-2), 217-21

CODEN: ICHAA3; ISSN: 0020-1693

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

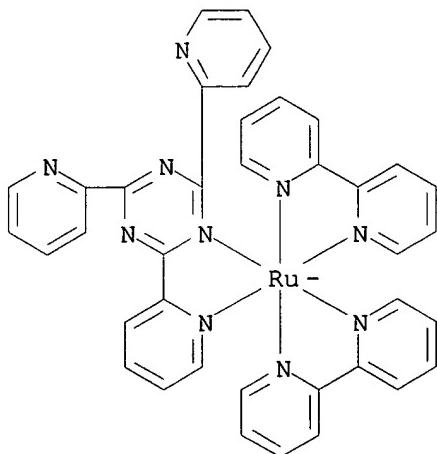
AB Electrochem. and spectroelectrochem. measurements were carried out on $[\text{Ru}(\text{bpy})_2(\text{tpt})]^{2+}$ ($\text{bpy} = 2,2'\text{-bipyridine}$, $\text{tpt} = 2,4,6\text{-tris}(2\text{-pyridyl)triazine}$). In DMF solution, this complex undergoes reversible 1-electron redns. at neg. potentials with E° values of -0.59, -1.22 and -1.48 V vs. Ag/AgCl(3M NaCl). Addnl., two poorly resolved reduction waves are observed at -1.77 and -1.86 V. In acetonitrile, a single metal based oxidn is observed at +1.55 V vs. Ag/AgCl(3M NaCl). UV-visible spectroelectrochem. was used to characterize the complex as well as its 1st three reduction products. From the spectroelectrochem. measurements, the 1st reduction is assigned as a tpt reduction, while the 2nd and 3rd redns. involve sep. bpy ligands.

IT 164532-87-0

(electrochem. formation and UV-visible spectra in DMF)

RN 164532-87-0 HCPLUS

CN Ruthenate(1-), bis(2,2'-bipyridine-N,N')(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2)-, (OC-6-33)- (9CI) (CA INDEX NAME)



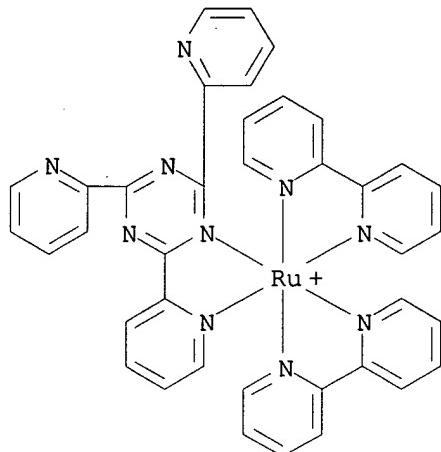
IT 164532-85-8 164532-86-9

(electrochem. formation and reduction and UV-visible spectra in

DMF)

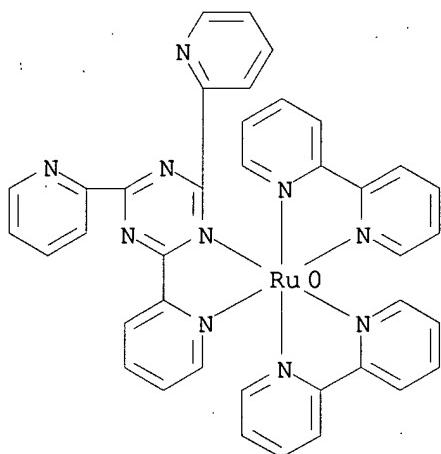
RN 164532-85-8 HCAPLUS

CN Ruthenium(1+), bis(2,2'-bipyridine-N,N')(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2)-, (OC-6-33)- (9CI) (CA INDEX NAME)



RN 164532-86-9 HCAPLUS

CN Ruthenium, bis(2,2'-bipyridine-N,N')(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2)-, (OC-6-33)- (9CI) (CA INDEX NAME)

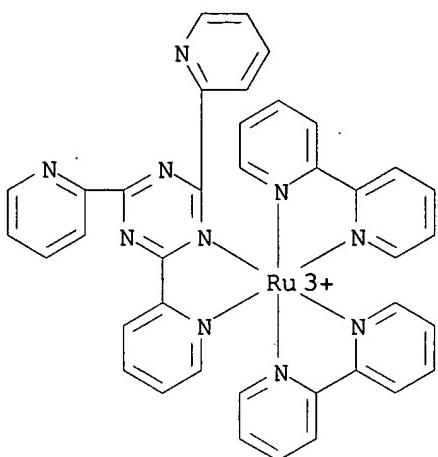


IT 164532-88-1

(electrochem. oxidative preparation of)

RN 164532-88-1 HCAPLUS

CN Ruthenium(3+), bis(2,2'-bipyridine-N,N')(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2)-, (OC-6-33)- (9CI) (CA INDEX NAME)

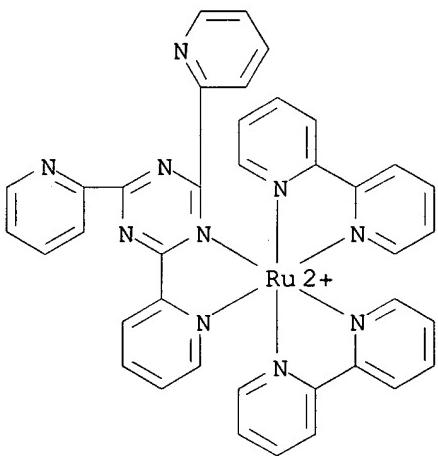


IT 134388-07-1

(electrochem. reduction and UV-visible spectra in DMF)

RN 134388-07-1 HCPLUS

CN Ruthenium(2+), bis(2,2'-bipyridine-N,N') (2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2)-, (OC-6-33)- (9CI) (CA INDEX NAME)



CC 72-2 (Electrochemistry)

Section cross-reference(s): 73, 78

IT Oxidation, electrochemical

(of ruthenium bipyridine pyridyltriazine complex in acetonitrile or DMF)

IT 164532-87-0

(electrochem. formation and UV-visible spectra in DMF)

IT 164532-85-8 164532-86-9

(electrochem. formation and reduction and UV-visible spectra in DMF)

IT 164532-88-1

(electrochem. oxidative preparation of)

IT 134388-07-1

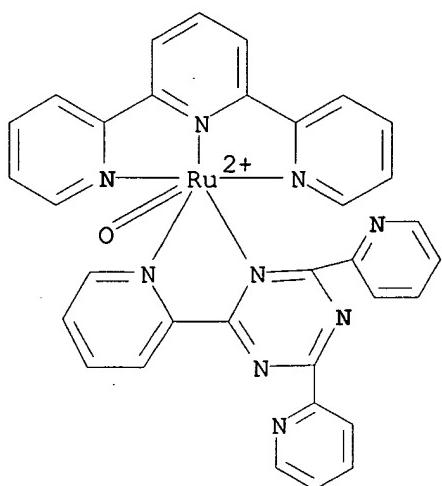
(electrochem. reduction and UV-visible spectra in DMF)

L16 ANSWER 20 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:159825 HCAPLUS
 DOCUMENT NUMBER: 118:159825
 TITLE: Synthesis and properties of new DNA cleavage agents based on oxoruthenium(IV)
 AUTHOR(S): Gupta, Nishi; Grover, Neena; Neyhart, Gregory A.; Singh, Phirtu; Thorp, H. Holden
 CORPORATE SOURCE: Dep. Chem., North Carolina State Univ., Raleigh, NC, 27695, USA
 SOURCE: Inorganic Chemistry (1993), 32(3), 310-16
 CODEN: INOCAJ; ISSN: 0020-1669
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB New aquaruthenium(II) reagents that are capable of being oxidized to hydroxoruthenium(III) and oxoruthenium(IV) were prepared. Complexes based on Ru(tpy)(L)OH²⁺ (L = η²-tpt, phen, dppz, tmen; tpy = 2,2':6',2''-terpyridine, tpt = 2,4,6-tripyridyltriazine, phen = 1,10-phenanthroline, dppz = dipyridophenazine, and tmen = N,N,N',N'-tetramethylethylenediamine) were prepared and can all be reversibly oxidized to their Ru^{IVO} forms, which are component DNA cleavage agents, as is Ru(phen)₂(py)O²⁺. In addition to Ru(tpy)(η²-tpt)OH²⁺, the η³ complex of tpt, Ru(tpy)(η³-tpt)²⁺, can also be prepared under similar conditions. In the presence of Ag⁺ ion, a novel Ru²⁺Ag complex can be isolated and was crystallographically characterized. [Ru(tpy)(η³-tpt)](ClO₄)₂·0.5AgClO₄·0.5H₂O crystallizes as monoclinic, space group A2/a, a 14.723(5), b 26.061(6), c 22.148(6) Å, β 106.33(3)°, Z = 4, R = 0.0807, R_w = 0.1156. The Ru(tpy)OH²⁺ unit can also be attached to the tmen-AO⁺ ligand, where a N,N',N'-trimethylethylenediamine function is appended via a (CH₂)₆ linker to the acridine orange (HAO) intercalator. The Ru(tpy)(tmen-AO)OH²⁺ complex is an effective cleavage agent, but only when oxidation is performed on the complex prebound to DNA. In homogeneous solution, electrochemically reversible access of only the Ru^{IIIOH} form is possible, probably because of oxidation of the polymethylene linker.

IT 146344-84-5P
 (formation by oxidation and DNA cleavage by)
 RN 146344-84-5 HCAPLUS
 CN Ruthenium(2+), oxo(2,2':6',2''-terpyridine-N,N',N'')(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2)-, (OC-6-43)- (9CI) (CA INDEX NAME)



IT 146647-08-7P

(preparation and crystal structure of)

RN 146647-08-7 HCPLUS

CN Ruthenium(5+), (silver)bis(2,2':6',2''-terpyridine-N,N',N'')bis[μ-(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6:N3,N4)]di-, pentaperchlorate, monohydrate (9CI) (CA INDEX NAME)

CM 1

CRN 146647-07-6

CMF C66 H46 Ag N18 Ru2 . 5 Cl O4

CM 2

CRN 146647-06-5

CMF C66 H46 Ag N18 Ru2

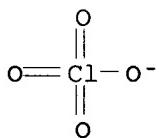
CCI CCS

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 3

CRN 14797-73-0

CMF Cl O4



IT 146435-73-6P

(preparation and cyclic voltammetry and oxidation and Pourbaix diagram of)

RN 146435-73-6 HCPLUS

CN Ruthenium(5+), diaqua(silver)bis(2,2':6',2''-terpyridine-N,N',N'')bis[μ-(2,4,6-tri-2-pyridinyl-1,3,5-triazine-

N1,N2:N4,N5)]di-, pentaperchlorate (9CI) (CA INDEX NAME)

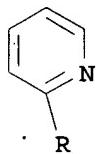
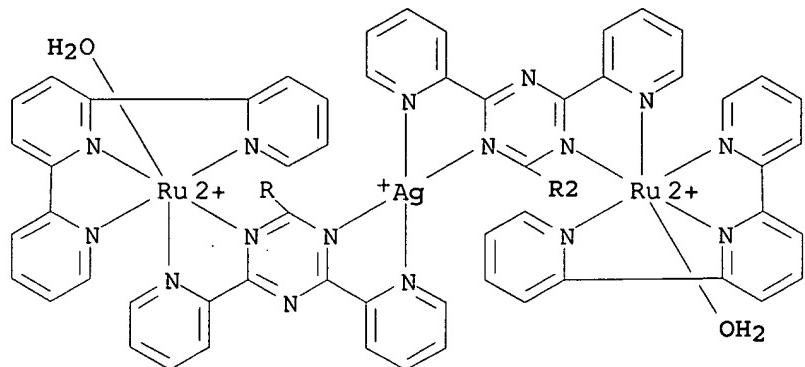
CM 1

CRN 146435-72-5

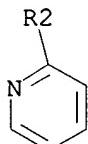
CMF C66 H50 Ag N18 O2 Ru2

CCI CCS

PAGE 1-A



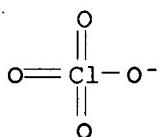
PAGE 2-A



CM 2

CRN 14797-73-0

CMF Cl O4

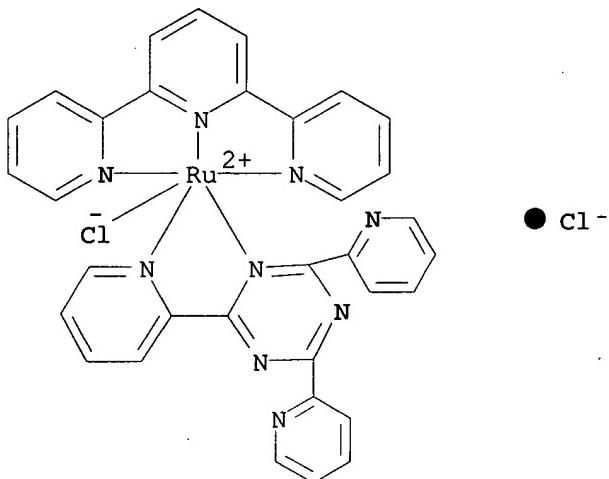


IT 146344-76-5P

(preparation and electrochem. oxidation and aquation of, in presence of silver perchlorate)

RN 146344-76-5 HCAPLUS

CN Ruthenium(1+), chloro(2,2':6',2'''-terpyridine-N,N',N'')(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2)-, chloride, (OC-6-43)- (9CI) (CA INDEX NAME)



IT 134388-06-0

(reaction of, with silver perchlorate, idle d and elec. potential of)

RN 134388-06-0 HCAPLUS

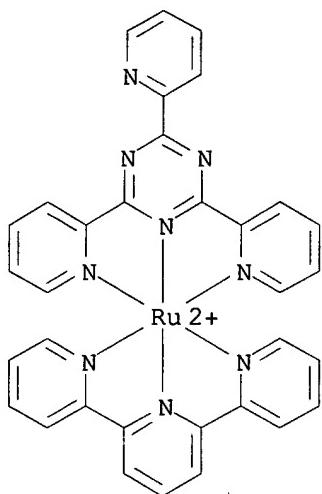
CN Ruthenium(2+), (2,2':6',2'''-terpyridine- κ N1, κ N1', κ N1'') (2,4,6-tri-2-pyridinyl-1,3,5-triazine- κ N1, κ N2, κ N6)-, (OC-6-23)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 134388-05-9

CMF C33 H23 N9 Ru

CCI CCS

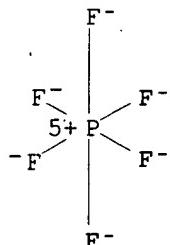


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 6, 72, 75

ST crystal structure ruthenium silver trinuclear tripyridyltriazine;
 DNA cleavage agent oxoruthenium 4 complex; ruthenium terpyridine
 oxo quaternary complex; electrochem oxidn ruthenium 2
 terpyridine complex

IT Oxidation, electrochemical
 (of ruthenium complexes with nitrogen donors)

IT 101241-02-5, Aqua(2,2':6',2'''-terpyridine)(1,10-
 phenanthroline)ruthenium(2+)
 (cyclic voltammetry and oxidation and acidity constant and
 Pourbaix diagram of)

IT 127714-17-4, Aqua(2,2':6',2'''-terpyridine)(N,N,N'N'-
 tetramethylethylenediamine)ruthenium(2+)
 (cyclic voltammetry and oxidation and acidity constant of)

IT 146344-84-5P 146344-86-7P
 (formation by oxidation and DNA cleavage by)

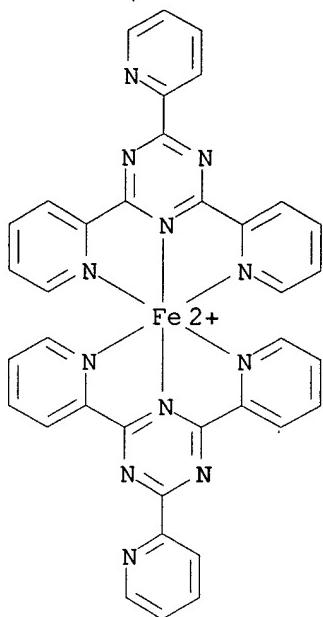
IT 98542-34-8P, Oxo(1,10-phenanthroline)(2,2':6',2'''-
 terpyridine)ruthenium(2+) 146344-85-6P
 (formation of, by oxidation)

- IT 67-64-1P, Acetone, preparation
 (formation of, in **oxidation** of alc. by ruthenium(IV) oxo complexes)
- IT 67-63-0, 2-Propanol, reactions
 (**oxidation** of, by ruthenium(IV) oxo complexes)
- IT 146647-08-7P
 (preparation and crystal structure of)
- IT 146344-80-1P
 (preparation and cyclic voltammetry and **oxidation** and DNA cleavage and acidity constant of)
- IT 49729-11-5P
 (preparation and cyclic voltammetry and **oxidation** and DNA cleavage by)
- IT 146435-73-6P
 (preparation and cyclic voltammetry and **oxidation** and Pourbaix diagram of)
- IT 146344-76-5P
 (preparation and electrochem. **oxidation** and aquation of, in presence of silver perchlorate)
- IT 134388-06-0
 (reaction of, with silver perchlorate, idle d and elec. potential of)

L16 ANSWER 21 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1993:155426 HCAPLUS
 DOCUMENT NUMBER: 118:155426
 TITLE: The oxalic acid **catalyzed**
 oxidation of bis(2,4,6-trypyridyl-
 1,3,5-triazine)iron(II) by chromium(VI) in
 acetate buffer
 AUTHOR(S): Satyanarayana, Tatakuntla; Anipindi, Nageswara
 Rao; Subbiah, Veeraputhiran; Pandit,
 Madhusudan Waman
 CORPORATE SOURCE: Sch. Chem., Andhra Univ., Visakhapatnam, 530
 003, India
 SOURCE: Transition Metal Chemistry (Dordrecht,
 Netherlands) (1993), 18(1), 93-5
 CODEN: TMCHDN; ISSN: 0340-4285
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The reaction between bis(2,4,6-tri(2-pyridyl)-1,3,5-triazine)iron(II), Fe(TPTZ)²²⁺, and Cr(VI) in acetate buffers is very slow. However, in the presence of oxalic acid (**catalyst**) it is very fast and is completed within 10 s. The reaction was studied in the 3.6-5.6 pH range by using stopped-flow spectrophotometry. The reaction is first order in the substrate and zero order in the oxidant. The rate of the reaction increases with an increase in pH. Kinetic evidence for complexation between the substrate and the **catalyst** was obtained and a mechanism involving the formation of an ion-pair between Fe(TPTZ)²²⁺ and the oxalate ion is proposed.

- IT 22452-38-6
 (**oxidation** of, by chromium(VI), **catalyzed** by
 oxalic acid, kinetics and mechanism of)
- RN 22452-38-6 HCAPLUS
 CN Iron(2+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 67-2 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
 Section cross-reference(s): 78
 ST iron pyridyltriazine oxidn chromium oxalic acid
 IT Oxidation
 (of iron(II) tripyridyltriazine complex by chromium(VI), catalyzed by oxalic acid)
 IT Kinetics of oxidation
 (of iron(II) tripyridyltriazine complex by chromium(VI), catalyzed by oxalic acid, temperature and pH dependences of)
 IT Oxidation catalysts
 (oxalic acid, for iron(II) tripyridyltriazine complex by chromium(VI))
 IT 144-62-7, Oxalic acid, uses
 (catalysts, for oxidation of iron(II) tripyridyltriazine complex by chromium(VI))
 IT 18540-29-9, Chromium(6+), reactions
 (oxidation by, of iron(II) tripyridyltriazine complex, catalyzed by oxalic acid, kinetics and mechanism of)
 IT 22452-38-6
 (oxidation of, by chromium(VI), catalyzed by oxalic acid, kinetics and mechanism of)

L16 ANSWER 22 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1992:559471 HCPLUS
 DOCUMENT NUMBER: 117:159471
 TITLE: Electrocatalytic reduction of carbon dioxide with iron, cobalt, and nickel complexes of terdentate ligands
 AUTHOR(S): Arana, C.; Yan, S.; Keshavarz-K., M.; Potts, K. T.; Abruna, H. D.
 CORPORATE SOURCE: Dep. Chem., Cornell Univ., Ithaca, NY, 14853, USA
 SOURCE: Inorganic Chemistry (1992), 31(17), 3680-2
 CODEN: INOCAJ; ISSN: 0020-1669

DOCUMENT TYPE:

Journal

LANGUAGE:

English

AB The authors prepared and characterized, by cyclic voltammetry in acetonitrile and DMF (under N₂ or CO₂), iron, cobalt and nickel complexes of a variety of terdentate ligands including 2,6-diacetylpyridine-bis-aniline (dapa), tetra-2-pyridylpyrazine (tppz), tri-2-pyridyltriazine (tptz), tetra-2-picolylenediamine (tpen), terpyridine (tpy) and vinylterpyridine (v-tpy). All of these materials exhibit electrocatalytic activity towards the reduction of CO₂ and the magnitude of the **catalytic** effect is a function of both the ligand and the metal center. Depending on the metal complex electrocatalysis is observed at potentials that correspond to metal and ligand based redox processes indicating that more than one mechanism might be operative. In the case of electropolymerizable metal complexes (those incorporating v-tpy) electrodeposited films exhibited electrocatalytic activity as well. In various cases, electrocatalysis was observed at potentials below -1.0 V which represents a very significant diminution (of about 1 V) in the overpotential.

IT 143371-83-9 143371-84-0

(redox potential and electrocatalytic properties toward carbon dioxide for)

RN 143371-83-9 HCPLUS

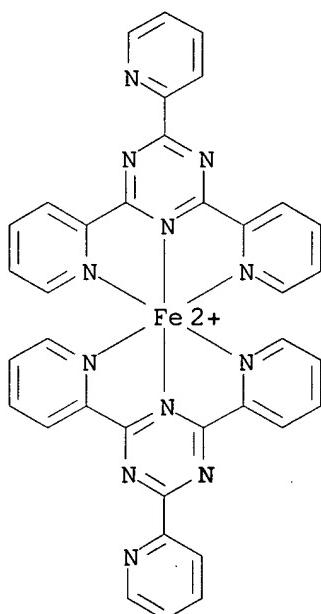
CN Iron(2+), bis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 22452-38-6

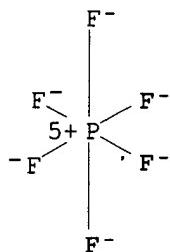
CMF C36 H24 Fe N12

CCI CCS



CM 2

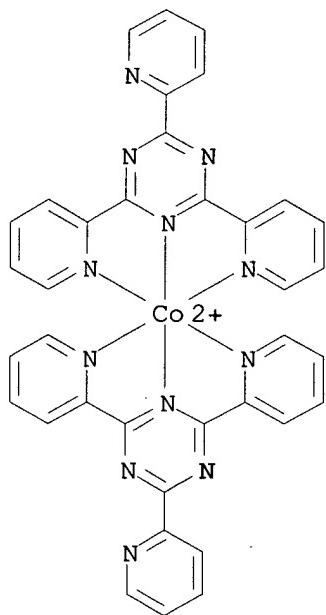
CRN 16919-18-9
 CMF F6 P
 CCI CCS



RN 143371-84-0 HCAPLUS
 CN Cobalt(2+), bis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-,
 (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

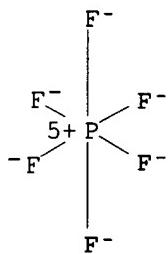
CM 1

CRN 31084-97-6
 CMF C36 H24 Co N12
 CCI CCS



CM 2

CRN 16919-18-9
 CMF F6 P
 CCI CCS



CC 72-2 (Electrochemistry)

Section cross-reference(s): 67

ST carbon dioxide redn electrocatalytic; electroredn
catalytic oxide transition metal complex; redox potential
iron cobalt nickel complex; polymn electrochem complex
electrocatalytic property

IT Reduction catalysts

(electrochem., transition metal complexes with terdentate
ligands, for carbon dioxide)IT 55140-72-2 65297-32-7 66118-92-1 82738-54-3 108270-37-7
108270-45-7 114320-90-0 121881-83-2 121881-84-3
143371-75-9 143371-76-0 143371-77-1 143371-78-2
143371-79-3 143371-80-6 143371-82-8 143371-83-9
143371-84-0 143371-85-1 143397-06-2 143428-37-9
143441-84-3(redox potential and electrocatalytic properties toward carbon
dioxide for)

L16 ANSWER 23 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1992:519268 HCPLUS

DOCUMENT NUMBER: 117:119268

TITLE: Kinetics and mechanism of the
oxidation of bis(2,4,6-triptyridyl-
1,3,5-triazine)iron(II) by
trans-1,2-diaminocyclohexanetetraacetatomangan-
ate(III) in acetate bufferAUTHOR(S): Satyanarayana, Tatakuntla, Anipindi, Nageswara
Rao; Subbiah, Veeraputhiran; Pandit,

Madhusudan Waman

CORPORATE SOURCE: Sch. Chem., Andhra Univ., Visakhapatnam,
530003, IndiaSOURCE: Transition Metal Chemistry (Dordrecht,
Netherlands) (1992), 17(4), 325-7
CODEN: TMCHDN; ISSN: 0340-4285

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The rapid oxidation of bis(2,4,6-triptyridyl-1,3,5-
triazine)iron(II), $[Fe(TPTZ)_2]^{2+}$, by trans-1,2-
diaminocyclohexanetetraacetatomanganate(III), $[Mn^{III}(L)]^{2-}$, in
acetate buffers was monitored by using stopped-flow
spectrophotometry. The reaction is first order in the substrate
and evidence was obtained for pre-complexation between the oxidant
and the substrate. The reaction rate increases as the pH
increases. Characterization of the products by using the
radiotracers ^{54}Mn and ^{59}Fe indicated that $[Mn^{II}(L)]^{2-}$ and
 $[Fe(TPTZ)_2]^{3+}$ are the final products. The reaction obeys the rate
law: $k_{obs} = k_3 K_2 [Mn^{III}(L)^{2-}] t / \{1 + K_1 [H^+] + K_2 [Mn^{III}(L)^{2-}] t\}$.

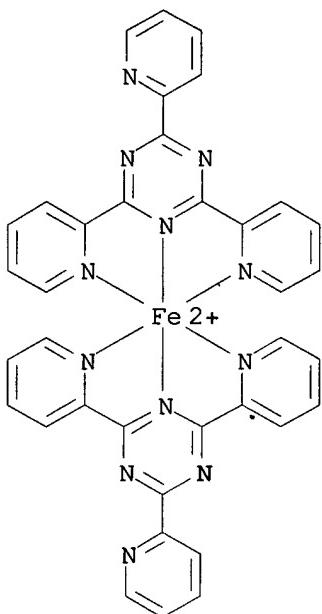
IT 22452-38-6

(oxidation of, by manganese(III))

diaminocyclohexanetetraacetato complex ion, kinetics and mechanism of)

RN 22452-38-6 HCPLUS

CN Iron(2+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 67-3 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)

Section cross-reference(s): 78

ST iron pyridyltriazine oxidn manganese aminocyclohexanetetraacetato kinetics

IT Oxidation

(of iron(II) tripyridyltriazine complex by manganese(III) diaminocyclohexanetetraacetato complex, in acetate buffer)

IT Kinetics of oxidation

(of iron(II) tripyridyltriazine complex by manganese(III) diaminocyclohexanetetraacetato complex, pH and temperature dependences of)

IT 73360-48-2

(oxidation by, of iron(II) tripyridyltriazine complex ion, kinetics and mechanism of)

IT 22452-38-6

(oxidation of, by manganese(III) diaminocyclohexanetetraacetato complex ion, kinetics and mechanism of)

L16 ANSWER 24 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1988:112702 HCPLUS

DOCUMENT NUMBER: 108:112702

TITLE: Rhodium(I) complexes with the 2,2'-bipyrimidine ligand

AUTHOR(S): Garcia, Maria P.; Millan, Jose L.; Esteruelas, Miguel A.; Oro, Luis A.

CORPORATE SOURCE: Inst. Cienc. Mater. Aragon, Univ. Zaragoza, Zaragoza, 50009, Spain

SOURCE: Polyhedron (1987), 6(6), 1427-31
 CODEN: PLYHDE; ISSN: 0277-5387

DOCUMENT TYPE: Journal
 LANGUAGE: English

OTHER SOURCE(S): CASREACT 108:112702

AB Mono- and dinuclear rhodium(I) complexes $[\text{Rh}(\text{L2})(\text{bipym})]^+$ and $[\text{Rh}(\text{L2})_2(\mu\text{-bipym})]^{2+}$ ($\text{bipym} = 2,2'\text{-bipyrimidine}$; $\text{L2} = 1,5\text{-cyclooctadiene}$ (cod), tetrafluorobenzobicyclo[1.1.2]octatriene (tfb), bicyclo[2.2.1]heptadiene (nbd), or $(\text{CO})_2$) were prepared and their catalytic activity in H-transfer reactions examined. The heterodinuclear $[\text{Cl}_2\text{Pd}(\mu\text{-bipym})\text{Rh}(\text{tfb})]\text{ClO}_4$ complex was obtained by treating $[\text{Rh}(\text{tfb})(\text{bipym})]^+$ with $[\text{PdCl}_2(\text{cod})]$ or alternatively from $[\text{Rh}(\text{tfb})(\text{Me}_2\text{CO})_x]^+$ with $[\text{PdCl}_2(\text{bipym})]$. Ion-pair complexes $[\text{Rh}(\text{L2})(\text{bipym})]^+[\text{RhCl}_2(\text{L2})]^-$ ($\text{L2} = \text{cod}$, nbd , tfb) were prepared by adding bipym to Me_2CO suspensions of $[\text{RhCl}(\text{L2})]_2$.

IT 113006-62-5P

(preparation of)

RN 113006-62-5 HCPLUS

CN Rhodium(3+), tris[(2,3,5,6- η)-bicyclo[2.2.1]hepta-2,5-diene] $[\mu^3-(2,4,6\text{-tri-2-pyridinyl-1,3,5-triazine-N}_1,\text{N}_2:\text{N}_3,\text{N}_4:\text{N}_5,\text{N}_6)]$ tri-, triperchlorate (9CI) (CA INDEX NAME)

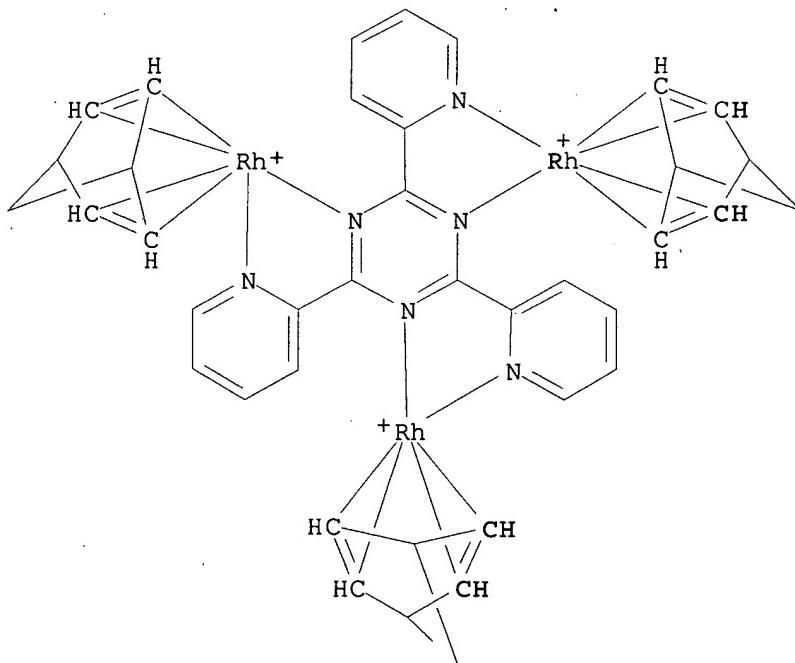
CM 1

CRN 113006-61-4

CMF C39 H36 N6 Rh3

CCI CCS

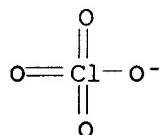
PAGE 1-A



PAGE 2-A

CM 2

CRN 14797-73-0
 CMF Cl O4

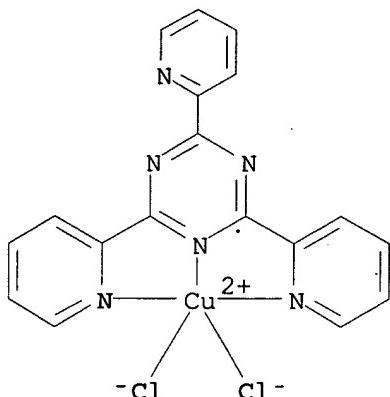


CC 29-13 (Organometallic and Organometalloidal Compounds)
 ST rhodium bipyrimidine olefin complex; hydrogen transfer catalyst rhodium complex; conductance rhodium bipyrimidine complex
 IT Hydrogen transfer catalysts (rhodium bipyrimidine olefin complexes, for hydrogen transfer from isopropanol to acetophenone)
 IT 98-86-2, Acetophenone, reactions (hydrogen transfer from isopropanol to, rhodium bipyrimidine complexes as catalysts for)
 IT 67-63-0, Isopropanol, reactions (hydrogen transfer from, to acetophenone, rhodium bipyrimidine complexes as catalysts for)
 IT 105083-99-6P 112987-39-0P 112987-41-4P 112987-43-6P
 112987-45-8P 112987-47-0P 112987-48-1P 112987-50-5P
 112987-51-6P 112987-52-7P 113006-55-6P 113006-57-8P
 113006-59-0P 113006-60-3P 113006-62-5P
 (preparation of)

L16 ANSWER 25 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1988:62131 HCPLUS
 DOCUMENT NUMBER: 108:62131
 TITLE: Study confirming the accuracy of a method for measuring TOC by wet oxidation
 AUTHOR(S): Sakamoto, T.; Miyasaka, T.
 CORPORATE SOURCE: Japan Organo Co., Ltd., Tokyo, 113, Japan
 SOURCE: Ultrapure Water (1987), 4(9), 24, 26-8, 30-1
 CODEN: ULWAE5; ISSN: 0747-8291

DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Synthetic and natural organic compds. of known chemical structures were used to compare the accuracy of total organic C (TOC) determination in water and wastewater by a wet oxidation method (S2082-oxidation combined with UV irradiation) with the accuracy of combustion-IR anal. The latter method was little affected by inorg. salts. NaCl at concns. of >250 mg/L considerably interfered with TOC determination by the wet oxidation, whereas Na₂SO₄ at a concentration of ≤2000 mg/L showed no interference.
 IT 107017-20-9 (determination of, in water, wet oxidation method in)

RN 107017-20-9 HCAPLUS
 CN Copper, dichloro(2,4,6-tri-2-pyridinyl-1,3,5-triazine-
 κN1,κN2,κN6)-, trihydrate (9CI) (CA INDEX NAME)



● 3 H₂O

CC 61-3 (Water)
 Section cross-reference(s): 80
 ST carbon org detn wet **oxidn**; analysis water carbon wet
oxidn; wastewater org carbon detn **oxidn**
 IT Fulvic acids
 Humic acids
 Peptones
 (determination of, in water, wet **oxidation** method in)
 IT 7440-44-0, Carbon, analysis
 (determination of total organic, in water, wet **oxidation** method in)
 IT 50-99-7, D-Glucose, analysis 61-73-4, Methylene Blue 64-17-5,
 Ethanol, analysis 65-85-0, Benzoic acid, analysis 66-71-7,
 1,10-Phenanthroline 67-56-1, Methanol, analysis 67-63-0,
 2-Propanol, analysis 67-64-1, Acetone, analysis 77-92-9,
 Citric acid, analysis 83-07-8, 4-Aminoantipyrine 121-57-3
 142-87-0, Decyl sodium sulfate 148-24-3, 8-Quinolinol, analysis
 151-21-3, analysis 547-58-0, Methyl Orange 633-96-5, Orange II
 877-24-7, Potassium hydrogen phthalate 1191-50-0, Tetradecyl
 sodium sulfate 2386-54-1 2832-45-3 5324-47-0 13419-61-9
 16177-21-2, L-Sodium glutamate 25155-30-0 58115-02-9
107017-20-9
 (determination of, in water, wet **oxidation** method in)
 IT 7732-18-5, Water, analysis
 (organic carbon determination in, wet **oxidation** method for,
 accuracy of)

L16 ANSWER 26 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1984:141193 HCAPLUS
 DOCUMENT NUMBER: 100:141193
 TITLE: Electrochemical sensors for anionic
 surfactants. I. The electrode based on
 bis[2,4,6-tris(2-pyridyl)-1,3,5-
 triazine]iron(II) dodecyl sulfate
 AUTHOR(S): Pak, U. Sap; Anghel, D. F.; Luca, C.

CORPORATE SOURCE: Dep. Chem. Phys., Inst. Chem. Res., Bucharest,

R-77208, Rom.

SOURCE: Revue Roumaine de Chimie (1983), 28(9-10),
883-90

CODEN: RRCHAX; ISSN: 0035-3930

DOCUMENT TYPE: Journal

LANGUAGE: English

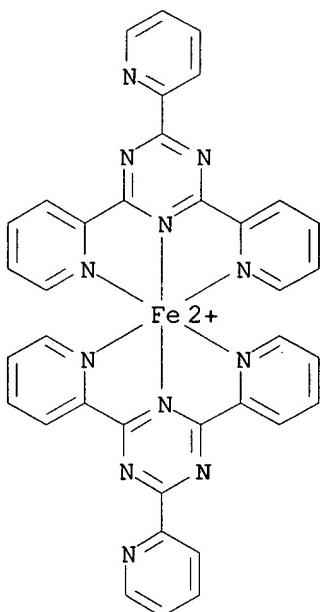
AB A dodecyl sulfate-selective electrode is described which is based on an iron(II)-2,4,6-tri(2-pyridyl)-1,3,5-triazine (1:2) [22452-38-6] complex. The concentration of the complex in the membrane mediator (PhNO₂) is 10-3M. The electrode has a Nernstian slope within the activity range 7.1 + 10-6-1.4 + 10-3M of dodecyl sulfate. The electrode behavior does not depend on pH in the range 4.5-9.0. The electrode has good selectivity with respect to interference by inorg. compds. Among the organic anions, only surfactant anions interfere. The sensor allows determination of critical micelle concentration in the absence or presence of inorg. electrolytes. It has been used as the end-point detector in potentiometric titration of ionic surfactants and for the determination of anionic surfactant content of micellar solns. used for enhanced oil recovery.

IT 22452-38-6

(electrodes containing, dodecyl sulfate-selective)

RN 22452-38-6 HCPLUS

CN Iron(2+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 46-1 (Surface Active Agents and Detergents)

IT 22452-38-6

(electrodes containing, dodecyl sulfate-selective)

L16 ANSWER 27 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1982:112159 HCPLUS

DOCUMENT NUMBER: 96:112159

TITLE: Solution redox couples for electrochemical

energy storage. II. Cobalt(III)-cobalt(II) complexes with o-phenanthroline and related ligands

AUTHOR(S): Chen, Yih Wen D.; Santhanam, K. S. V.; Bard, Allen J.

CORPORATE SOURCE: Dep. Chem., Univ. Texas, Austin, TX, 78712, USA

SOURCE: Journal of the Electrochemical Society (1982), 129(1), 61-6
CODEN: JESOAN; ISSN: 0013-4651

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Co(III) and Co(II) complexes with o-phenanthroline, bipyridine, and related ligands were examined by voltammetric and coulometric techniques in aqueous H₂SO₄ media to investigate their suitability as redox couples for electrochem. energy storage systems and semiconductor photoelectrochem. cells. The Co(II) complex undergoes a rapid (.apprx.10⁻³ cm/s) 1-electron oxidation at a graphite or Pt electrode to yield the Co(III) complex. With several ligands, both forms of the couple are very stable and show formal potentials shifted very neg. (to .apprx.0.1 V vs. SCE) from that of the aqua-Co(III/II) couple.

IT 80995-91-1
(oxidation of, kinetics of electrochem., in aqueous sulfuric acid solution)

RN 80995-91-1 HCPLUS

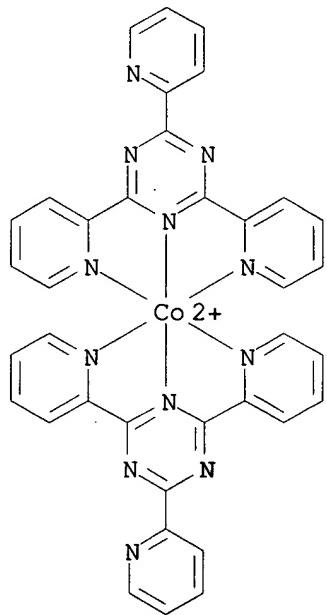
CN Cobalt(2+), bis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, (OC-6-1'2)-, sulfate (1:1) (9CI) (CA INDEX NAME)

CM 1

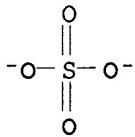
CRN 31084-97-6

CMF C36 H24 Co N12

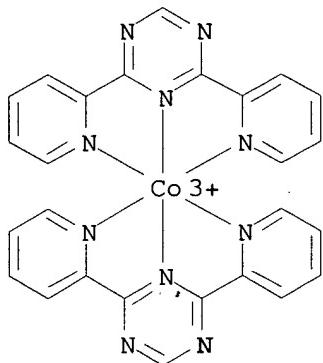
CCI CCS



CM 2

CRN 14808-79-8
CMF 04 S

- IT 80923-87-1
 (redox reaction of system containing, electrochem., in sulfate solns.)
 RN 80923-87-1 HCPLUS
 CN Cobalt(3+), bis(2,4-di-2-pyridinyl-1,3,5-triazine-N2,N3,N4)-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



- CC 72-2 (Electrochemistry)
 Section cross-reference(s): 52, 67, 68, 78
 IT Kinetics of oxidation
 (electrochem., of cobalt complexes with bipyridine and phenanthroline and related ligands, in aqueous sulfuric acid solution)
 IT 7440-06-4, uses and miscellaneous 7782-42-5, uses and miscellaneous
 (electrode, electrochem. oxidation of cobalt complexes on, in sulfate solution)
 IT 7439-97-6, uses and miscellaneous
 (electrode, electrochem. oxidation of cobalt-phenanthroline complexes on, in sulfate solution)
 IT 26096-51-5 70765-25-2 77610-09-4 80711-12-2 80711-13-3
 80733-46-6 80995-91-1
 (oxidation of, kinetics of electrochem., in aqueous sulfuric acid solution)
 IT 18581-79-8 19052-39-2 19137-07-6 62791-75-7 80711-14-4
 80711-15-5 80923-87-1
 (redox reaction of system containing, electrochem., in sulfate solns.)

L16 ANSWER 28 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1981:622817 HCPLUS

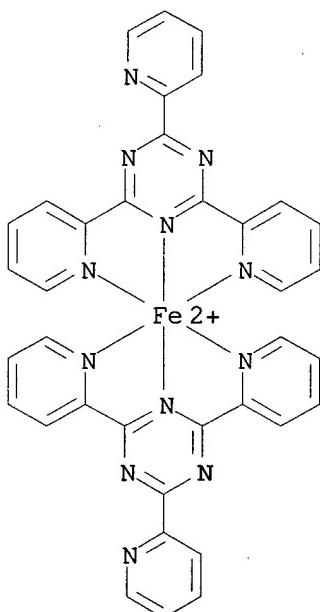
DOCUMENT NUMBER: 95:222817
 TITLE: Solution redox couples for electrochemical energy storage. I. Iron(III)-iron(II) complexes with o-phenanthroline and related ligands
 AUTHOR(S): Chen, Yih-Wen D.; Santhanam, K. S. V.; Bard, Allen J.
 CORPORATE SOURCE: Dep. Chem., Univ. Texas, Austin, TX, 78712, USA
 SOURCE: Journal of the Electrochemical Society (1981), 128(7), 1460-7
 CODEN: JESOAN; ISSN: 0013-4651
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Fe³⁺-Fe²⁺ complexes with o-phenanthroline and related ligands were examined by electrochem. techniques in aqueous H₂SO₄ media for their suitability as redox couples for electrochem. energy storage. The Fe²⁺ complexes undergo a rapid 1-electron oxidation at graphite and Pt electrodes to yield Fe³⁺ complexes; these complexes showed varying stabilities depending on the nature of the substituents on the complexes. The Fe²⁺ complexes examined were formed with monodentate, bidentate, or tridentate ligands. The redox couples have a high potential, E₀, value which was a pos. consideration in the storage. Although the aquo Fe²⁺-Fe³⁺ couple has an E₀ less than the complexes, it has a greater promise in terms of storage stability. The kinetics of Fe²⁺ complexation was followed by cyclic voltammetry.

IT 22452-38-6
 (for redox-flow batteries, properties of)

RN 22452-38-6 HCAPLUS

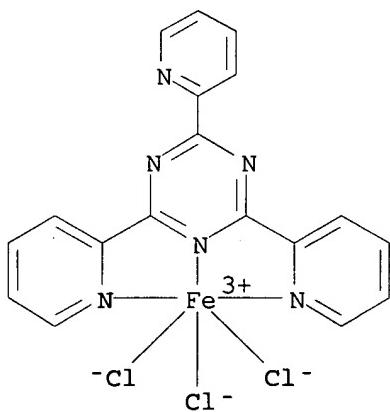
CN Iron(2+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT 14708-99-7 15025-74-8 15053-59-5 15226-33-2 15245-50-8

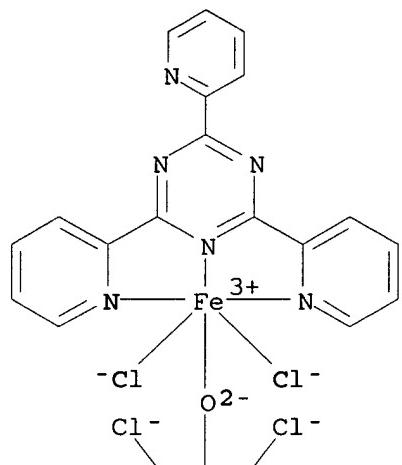
17455-70-8 18131-30-1 22452-38-6 55290-28-3
 79968-89-1 79968-90-4
 (for redox-flow batteries, properties of)

L16 ANSWER 29 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1981:543300 HCAPLUS
 DOCUMENT NUMBER: 95:143300
 TITLE: Characterization of the thermolysis products
 of Fe(TPTZ)2Cl2·nH2O and the related
 2,4,6-tris(2-pyridyl)-1,3,5-triazine complexes
 Zn(TPTZ)Cl2 and Fe(TPTZ)Cl3
 AUTHOR(S): Sedney, Diana; Kahjehnassiri, Mina; Reiff,
 William Michael
 CORPORATE SOURCE: Dep. Chem., Northeastern Univ., Boston, MA,
 02115, USA
 SOURCE: Inorganic Chemistry (1981), 20(10), 3476-81
 CODEN: INOCAJ; ISSN: 0020-1669
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A new five-coordinate ferrous complex, Fe(TPTZ)Cl2 (TPTZ =
 2,4,6-tris(2-pyridyl)-1,3,5-triazine) was prepared by thermolysis of
 the hydrate of the bis complex. The neat powder form of this
 species undergoes a slow, irreversible oxidation in the
 atmospheric at ambient temperature to the very strongly antiferromagnetically
 coupled ferric dimer [Fe(TPTZ)Cl2]2O. These complexes as well as
 the related Zn(TPTZ)Cl2 and Fe(TPTZ)Cl3 were characterized by a
 variety of phys. methods.
 IT 78529-67-6P
 (preparation and Moessbauer spectrum of)
 RN 78529-67-6 HCAPLUS
 CN Iron, trichloro[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-
 triazine- κ N1]-, (OC-6-21)- (9CI) (CA INDEX NAME)

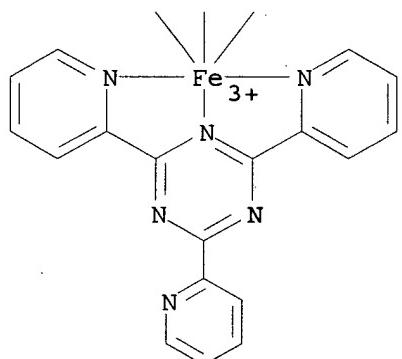


IT 78529-68-7P
 (preparation and magnetic properties of)
 RN 78529-68-7 HCAPLUS
 CN Iron, tetrachloro- μ -oxobis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-
 N1,N2,N6)di- (9CI) (CA INDEX NAME)

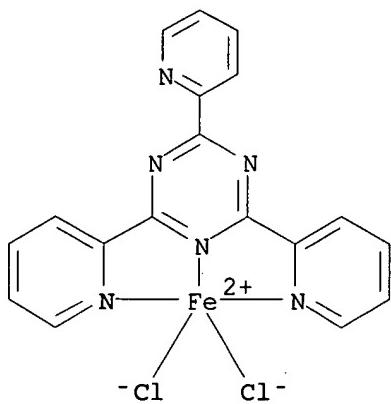
PAGE 1-A



PAGE 2-A



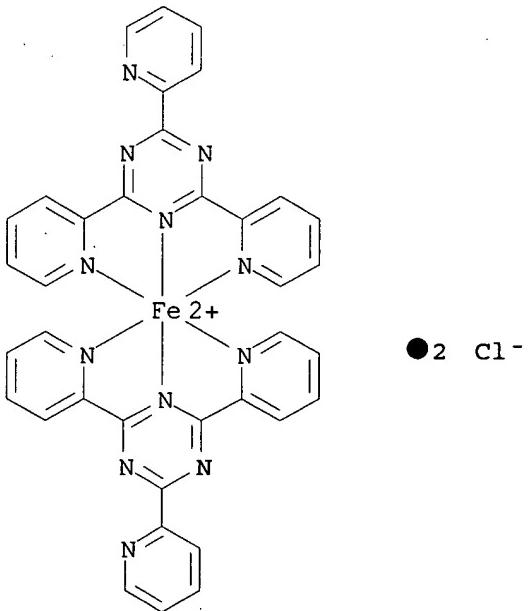
IT 78529-69-8P
 (preparation and oxidation of)
 RN 78529-69-8 HCAPLUS
 CN Iron, dichloro(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-,
 (TB-5-33)- (9CI) (CA INDEX NAME)



IT 78529-70-1
(thermal decomposition of)

RN 78529-70-1 HCPLUS

CN Iron(2+), bis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, dichloride, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 78-7 (Inorganic Chemicals and Reactions)

IT 78529-67-6P
(preparation and Moessbauer spectrum of)

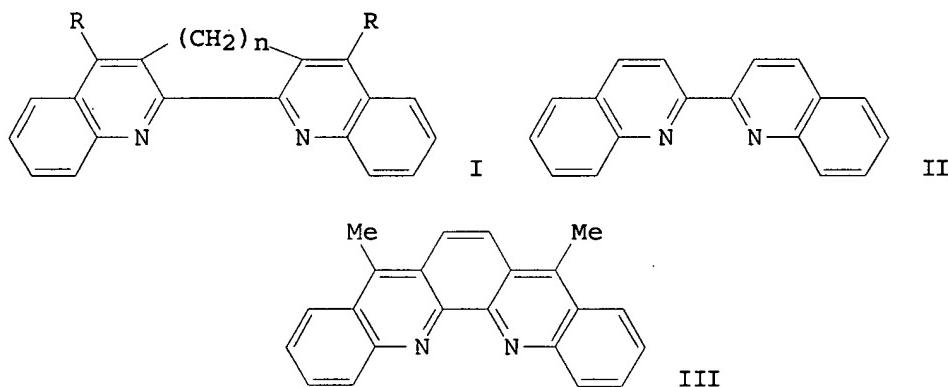
IT 78529-68-7P
(preparation and magnetic properties of)

IT 78529-69-8P
(preparation and oxidation of)

IT 78529-70-1
(thermal decomposition of)

L16 ANSWER 30 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1981:10534 HCPLUS

DOCUMENT NUMBER: 94:10534
 TITLE: Synthesis, spectroscopic properties and electrochemical behavior of ruthenium(II) complexes with bidentate nitrogen ligands
 AUTHOR(S): Belser, Peter; Von Zelewsky, Alex
 CORPORATE SOURCE: Inst. Anorg. Chem., Univ. Fribourg, Fribourg, CH-1700, Switz.
 SOURCE: Helvetica Chimica Acta (1980), 63(6), 1675-702
 DOCUMENT TYPE: Journal
 LANGUAGE: German
 GI



AB [Ru(bipy)_{3-x}L_x] (PF₆)₂ [bipy = 2,2'-bipyridine; L = I (n = 1 or 3, R = Me, Ph; n = 2, R = H, Me, Ph), II, III, 4-nitro-2,2'-bipyridine, 4,4'-dichloro- and 4,4'-di-tert-butyl-2,2'-bipyridine, 2,9-dimethyl- and 4,7-diphenyl-1,10-phenanthroline, 2,4,6-tris(2-pyridyl)-1,3,5-triazine, 2-(phenyliminomethyl)pyridine; x = 0-3] were prepared and characterized by chemical anal., electronic, IR, NMR, and CD spectra, and cyclic voltammetry. The ligands L are related to bipy but differ from it in their π -electron systems. In some ligands, e.g. I (n = 2, R = Me), the 2 halves of the mol. are forced to be nonplanar by the aliphatic bridge between the 2 rings. The properties of the mixed-ligand complexes are compared with those of [Ru(bipy)₃]²⁺; the former show ≥ 1 spin-allowed charge-transfer transitions at longer wavelength than those of the latter. The ground-state oxidation potentials to the 3+ state are little affected by substitution of bipy by L whereas the reduction behavior is strongly affected. The ¹H NMR spectra indicate rigid conformations of some of the nonplanar L ligands in the complexes.

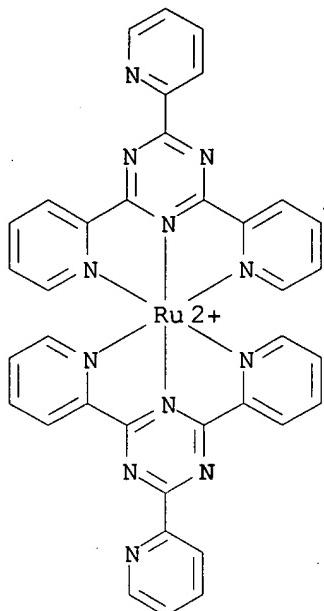
IT 75964-99-7
 (electronic spectrum of, charge-transfer bands in)

RN 75964-99-7 HCAPLUS

CN Ruthenium(2+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

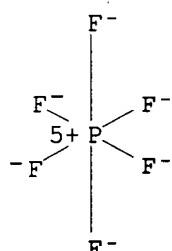
CM 1

CRN 61037-16-9
 CMF C36 H24 N12 Ru
 CCI CCS



CM 2

CRN 16919-18-9
 CMF F6 P
 CCI CCS



CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 72, 73
 IT 66810-60-4 75964-99-7
 (electronic spectrum of, charge-transfer bands in)

L16 ANSWER 31 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1979:212251 HCPLUS
 DOCUMENT NUMBER: 90:212251
 TITLE: Semiconductor electrodes. XVII.
 Electrochemical behavior of n- and p-type
 indium phosphide electrodes in acetonitrile

solutions

AUTHOR(S): Kohl, Paul A.; Bard, Allen J.
 CORPORATE SOURCE: Dep. Chem., Univ. Texas, Austin, TX, USA
 SOURCE: Journal of the Electrochemical Society (1979),
 126(4), 598-603
 CODEN: JESOAN; ISSN: 0013-4651

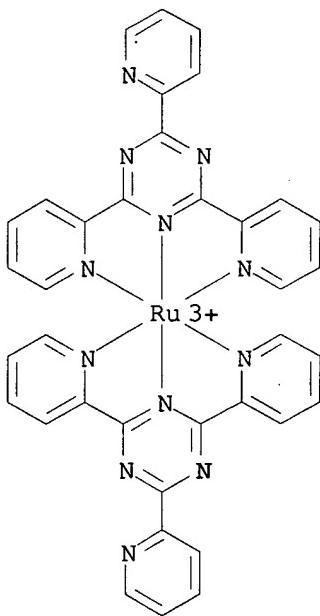
DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The photoelectrochem. behavior of n- and p-InP single-crystal semiconductors was investigated in MeCN solns. which contained various electroactive compds. The cyclic voltammograms of the semiconductors in the dark and illuminated with red light were compared to the Nernstian behavior at a Pt electrode. The extent of photodissoln. of the semiconductors was decreased in MeCN compared to aqueous solns. at similar potentials. Intermediate levels or surface sites located between the conduction band and valence band which mediate electron transfer with solution redox couples are proposed. An undervoltage was developed for the photo assisted oxidns. and redns. with n- and p-InP, resp., and the potential range for photoredns. on p-InP extended neg. of the conduction band edge. The electrochem. behavior and magnitude of the undervoltages is compared to results with InP in aqueous solns. and with other semiconductors in MeCN.

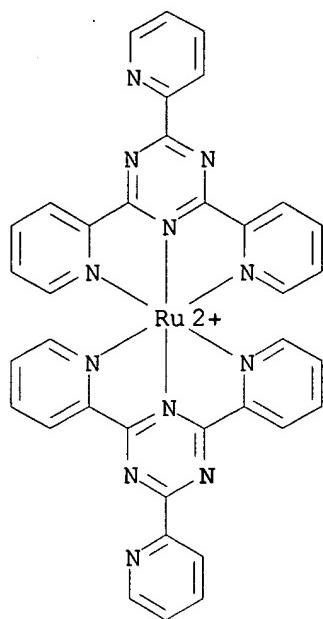
IT 21791-68-4
 (voltammetry of, on indium phosphide in acetonitrile,
 illumination effect on)

RN 21791-68-4 HCPLUS

CN Ruthenium(3+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

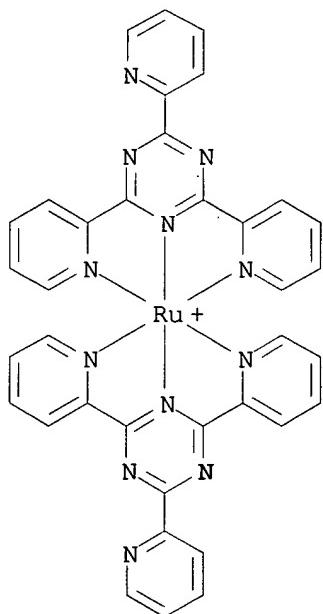


IT 61037-16-9 69666-63-3 69667-97-6
 (voltammetry of, on indium phosphide, illumination effect on)
 RN 61037-16-9 HCPLUS
 CN Ruthenium(2+), bis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



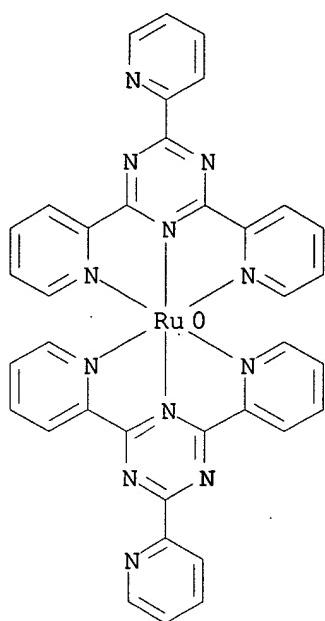
RN 69666-63-3 HCPLUS

CN Ruthenium(1+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 69667-97-6 HCPLUS

CN Ruthenium, bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 72-11 (Electrochemistry)

Section cross-reference(s): 74, 76

ST indium phosphide electrode voltammetry light; semiconductive
indium phosphide electrode; acetonitrile semiconductive indium
phosphide electrode; redox reaction photoelectrochem indium
phosphide; redn photoelectrochem indium phosphide; oxidn
photoelectrochem indium phosphate

IT Oxidation, electrochemical

Oxidation, photochemical

Reduction, electrochemical

Reduction, photochemical

(on indium phosphide, in acetonitrile)

IT 84-65-1 100-22-1 106-51-4, reactions 120-12-7, reactions

15158-62-0 21791-68-4 28351-02-2 34527-55-4

47367-75-9 62671-94-7

(voltammetry of, on indium phosphide in acetonitrile,
illumination effect on)

IT 3225-29-4, properties 3426-73-1 15158-62-0 34505-64-1

34509-92-7, reactions 56977-24-3 61037-16-9

69666-63-3 69667-97-6

(voltammetry of, on indium phosphide, illumination effect on)

L16 ANSWER 32 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1979:143507 HCPLUS

DOCUMENT NUMBER: 90:143507

TITLE: Semiconductor electrodes. XVI. The
characterization and photoelectrochemical
behavior of n- and p-gallium arsenide
electrodes in acetonitrile solutions

AUTHOR(S): Kohl, P. A.; Bard, A. J.

CORPORATE SOURCE: Dep. Chem., Univ. Texas, Austin, TX, USA

SOURCE: Journal of the Electrochemical Society (1979),
126(1), 59-67

DOCUMENT TYPE: CODEN: JESOAN; ISSN: 0013-4651

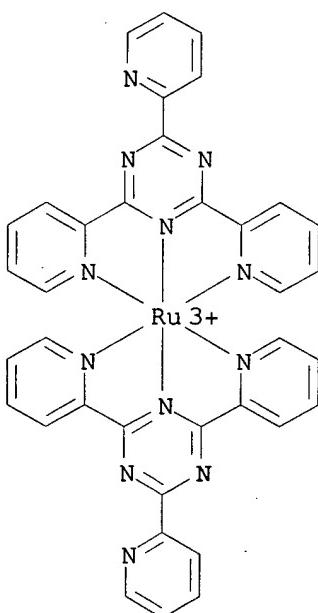
LANGUAGE: Journal

AB The cyclic voltammograms of the semiconductor electrodes in the dark and illuminated with red light are compared to the Nernstian behavior at a Pt disk electrode. The photodissol. of the semiconductors was suppressed and did not occur until potentials well pos. of the flatband potential. An undervoltage(neg. overvoltage) was developed on the photoassisted oxidation (n-type semiconductor) and reduction (p-type material) of the solution species. Intermediate levels or surface states are capable of mediating electron transfer and limiting the magnitude of the undervoltage produced. The production of surface films at potentials neg.of the conduction bandedge can produce a photovoltaic effect with the GaAs assisting in the electron transfer. Thus, photoassisted electron transfer with electroactive solution species is observed spanning a potential range >2.5 V utilizing a 1.35 eV photon.

IT 21791-68-4
 (reduction of, electrochem. on semiconductive gallium arsenide,
 illumination effect on)

RN 21791-68-4 HCAPLUS

CN Ruthenium(3+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-
 1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

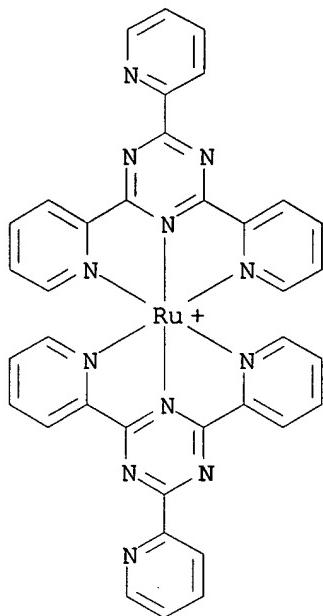


(redn. of, electrochem., on semiconductive gallium arsenide,
 illumination effect on

IT 69666-63-3 69667-97-6 69730-33-2
 (redox reaction of systems containing, electrochem., on
 semiconductive gallium arsenide, illumination effect on)

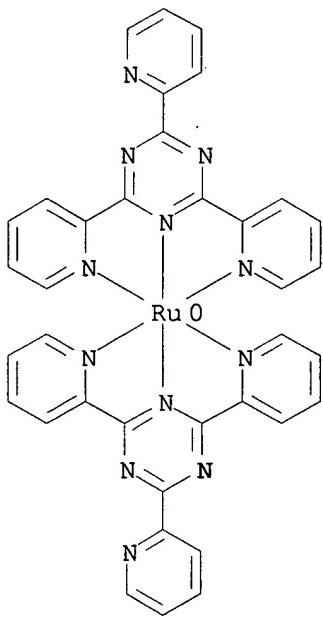
RN 69666-63-3 HCAPLUS

CN Ruthenium(1+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-
 1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



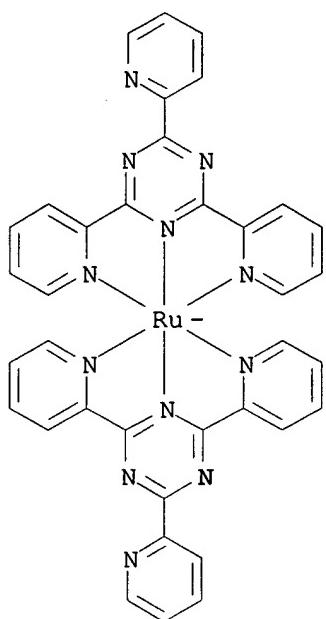
RN 69667-97-6 HCAPLUS

CN Ruthenium, bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 69730-33-2 HCAPLUS

CN Ruthenate(1-), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 72-11 (Electrochemistry)

Section cross-reference(s): 74, 76

IT Oxidation, electrochemical

(of ruthenium complexes and reduced organic compds., on gallium arsenide)

IT 100-22-1 3225-29-4, reactions 3426-73-1 62671-94-7
69483-88-1

(oxidation of, electrochem., on semiconductive gallium arsenide electrodes, illumination effect on)

IT 34505-64-1 34509-92-7, reactions
(oxidation of, electrochem., on semiconductive gallium arsenide, illumination effect on)

IT 21791-68-4
(reduction of, electrochem. on semiconductive gallium arsenide, illumination effect on)

IT 84-65-1 106-51-4, reactions 120-12-7, reactions 15158-62-0
21791-68-4 28351-02-2 34527-55-4 47367-75-9

(reduction of, electrochem., on semiconductive gallium arsenide, illumination effect on)

IT 15158-62-0 56977-24-3 69666-63-3 69667-97-6
69730-33-2

(redox reaction of systems containing, electrochem., on semiconductive gallium arsenide, illumination effect on)

L16 ANSWER 33 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1976:10406 HCPLUS

DOCUMENT NUMBER: 84:10406

TITLE: Semiconductor electrodes. II.

Electrochemistry at n-type titanium dioxide electrodes in acetonitrile solutions

Frank, S. N.; Bard, Allen J.

AUTHOR(S): Frank, S. N.; Bard, Allen J.

CORPORATE SOURCE: Dep. Chem., Univ. Texas, Austin, TX, USA

SOURCE: Journal of the American Chemical Society
(1975), 97(26), 7427-33

CODEN: JACSAT; ISSN: 0002-7863

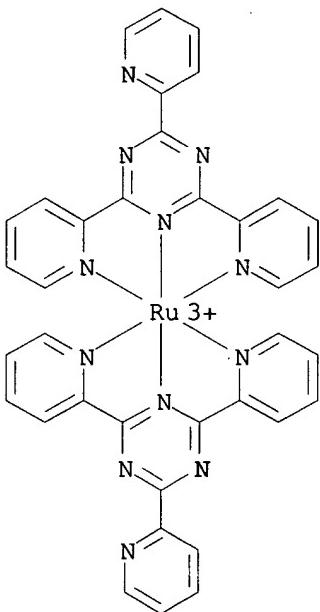
DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The electrode response of single crystal n-type TiO₂ [13463-67-7] in MeCN was investigated with a large number of electroactive compds. differing widely in their standard potentials. The electrochem. behavior of various compds. can be used to investigate the band structure of the semiconductor electrode. This method is useful in detecting intermediate energy levels between the conduction and valence bands capable of mediating electron transfer and in assigning energies to these levels. For TiO₂, at least 1 intermediate energy level was located about 1.2 eV below the conduction band. Polycryst. TiO₂ was shown to respond in a similar fashion, indicating that the intermediate energy level is characteristic of n-type TiO₂. A comparison of the behavior of metal and semiconductor electrodes as a function of the redox potential of various couples and the effect of light on oxidns. at the TiO₂ electrodes is discussed.

IT 21791-68-4
 (redox potential of, at platinum and titanium dioxide electrodes)

RN 21791-68-4 HCAPLUS

CN Ruthenium(3+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 72-7 (Electrochemistry)
 Section cross-reference(s): 76

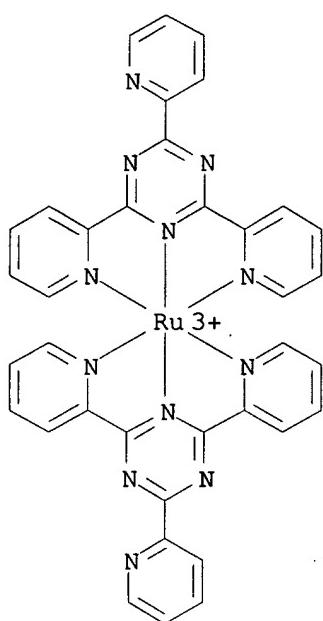
IT Photovoltaic effect
 (at titanium dioxide electrodes, oxidns. in relation to)

IT 84-65-1 106-51-4, properties 120-12-7, properties 120-46-7
 1499-10-1 18955-01-6 21791-68-4 34507-27-2
 34510-35-5 34527-55-4
 (redox potential of, at platinum and titanium dioxide electrodes)

L16 ANSWER 34 OF 35 HCPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1973:552272 HCPLUS
 DOCUMENT NUMBER: 79:152272
 TITLE: Electrogenerated chemiluminescence. XIII.
 Electrochemical and electrogenerated
 chemiluminescence studies of ruthenium
 chelates
 AUTHOR(S): Tokel-Takvoryan, Nurhan E.; Hemingway, Ronald
 E.; Bard, Allen J.
 CORPORATE SOURCE: Dep. Chem., Univ. Texas, Austin, TX, USA
 SOURCE: Journal of the American Chemical Society
 (1973), 95(20), 6582-9
 CODEN: JACSAT; ISSN: 0002-7863
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The electrochemistry and electrogenerated chemiluminescence (ecl) of 4 Ru(II) chelates, RuL_xn⁺ (x = 3, n = 2, L = 2,2'-bipyridine (bipy); x = 3, n = 2, L = 1,10-phenanthroline (o-phen); x = 2, n = 2, L = 2,2',2'''-terpyridine (terpy); x = 2, n = 3, L = 2,4,6-trypyridyl-s-triazine, in MeCN solns. were investigated. All compds. showed evidence of several 1-electron reduction and oxidation steps to form products stable during cyclic voltammetric scans. Coulometric and rotating ring-disk electrode (RRDE) studies of the bipy chelate were also carried out. The bipy, o-phen, and terpy chelates produce ecl via redox reactions of oxidized and reduced forms to form an emitting species, which has been identified as the triplet state by comparison to its luminescence spectrum; the ecl of the bipy chelate is the most intense. A study of ecl of the bipy chelate at the RRDE yielded an ecl efficiency of 5-6%.

IT 21791-68-4
 (chemiluminescence of, electrogenerated, redox behavior in
 relation to)
 RN 21791-68-4 HCPLUS
 CN Ruthenium(3+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-
 1,3,5-triazine- κ N1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 77-12 (Electrochemistry)

Section cross-reference(s): 73

IT 15158-62-0 21791-68-4 22873-66-1 24414-01-5
(chemiluminescence of, electrogenerated, redox behavior in relation to)

L16 ANSWER 35 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1972:41433 HCAPLUS

DOCUMENT NUMBER: 76:41433

TITLE: Synthesis, isolation, and characterization of some iron(II) complexes with mixed α,α' -diimine ligands

AUTHOR(S): Taylor, P. J.; Schilt, A. A.

CORPORATE SOURCE: Chem. Dep., North. Illinois Univ., DeKalb, IL, USA

SOURCE: Inorganica Chimica Acta (1971), 5(4), 691-7
CODEN: ICHAA3; ISSN: 0020-1693

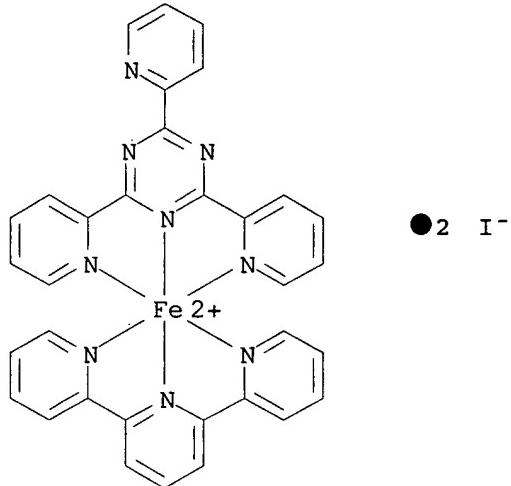
DOCUMENT TYPE: Journal

LANGUAGE: English

AB Syntheses are described for mixed ligand complexes of the type [Fe(hen)_n-L_{3-n}]X₂ and [Fe(terpy)(TPTZ)]X₂ (where n=1 or 2, phen=1,10-phenanthroline, L=methyl-, phenyl-, nitro-, or chlorosubstituted 1,10-phenanthroline, terpy=2,2',2''-terpyridine, TPTZ=tris(2-pyridyl)-1,3,5-triazine and X=ClO₄⁻ and I⁻) and [Fe(phen)_nL_{3-n}'] (where n=2 and L'=4,7-dihydroxy-1,10-phenanthrolinato, 4,7-diphenyl-1,10-phenanthrolinedisulfonato or dimethylglyoximato; also where n=1 and L'=4,7-dihydroxy-1,10-phenanthrolinato, 1,10-phenanthrolinato, 1,10-phenanthroline-5-sulfonato or phenyl-2-pyridyl ketoximato). The formal oxidation-reduction potentials and visible absorption spectra of these mixed ligand complexes show certain regularities in comparisons with related unmixed complexes that are of theoretical interest and practical significance. These are discussed.IT 35235-48-4P 35260-77-6P
(preparation of)

RN 35235-48-4 HCAPLUS

CN Iron(2+), (2,2':6',2'''-terpyridine-N,N',N'')(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, diiodide (9CI) (CA INDEX NAME)



RN 35260-77-6 HCAPLUS

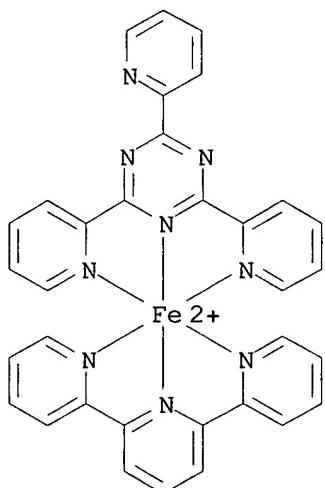
CN Iron(2+), (2,2':6',2'''-terpyridine-N,N',N'')(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, diperchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 47838-15-3

CMF C33 H23 Fe N9

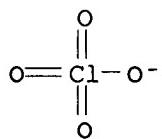
CCI CCS



CM 2

CRN 14797-73-0

CMF Cl 04



CC 78 (Inorganic Chemicals and Reactions)

IT Electric potential

(oxidation-reduction, of iron phenanthroline derivative complexes)

IT	35235-36-0P	35235-37-1P	35235-38-2P	35235-39-3P
	35235-40-6P	35235-41-7P	35235-42-8P	35235-43-9P
	35235-44-0P	35235-45-1P	35235-46-2P	35235-47-3P
	35235-48-4P	35235-49-5P	35235-50-8P	35235-51-9P
	35260-67-4P	35260-68-5P	35260-69-6P	35260-70-9P
	35260-71-0P	35260-72-1P	35260-73-2P	35260-74-3P
	35260-75-4P	35260-76-5P	35260-77-6P	35318-57-1P
	35318-58-2P	35318-59-3P	35318-60-6P	35318-61-7P

(preparation of)